



DEVELOPMENT SERVICES DEPARTMENT  
ENVIRONMENTAL COORDINATOR  
450 110<sup>th</sup> Ave NE., P.O. BOX 90012  
BELLEVUE, WA 98009-9012

### **OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS**

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No. 16-136213-WG

Project Name/Address: Meydenbauer Bay Park Sewer Line Replacement

Planner: Reilly Pittman

Phone Number: 425-452-4350

**Minimum Comment Period:** August 1, 2016

Materials included in this Notice:

- ☒ Blue Bulletin
- ☒ Checklist
- ☒ Vicinity Map
- ☒ Plans
- ☐ Other:

#### **OTHERS TO RECEIVE THIS DOCUMENT:**

- ☒ State Department of Fish and Wildlife / [Sterwart.Reinbold@dfw.gov](mailto:Sterwart.Reinbold@dfw.gov); [Christa.Heller@dfw.wa.gov](mailto:Christa.Heller@dfw.wa.gov);
- ☒ State Department of Ecology, Shoreline Planner N.W. Region / [Jobu461@ecy.wa.gov](mailto:Jobu461@ecy.wa.gov); [sepaunit@ecy.wa.gov](mailto:sepaunit@ecy.wa.gov)
- ☒ Army Corps of Engineers [Susan.M.Powell@nws02.usace.army.mil](mailto:Susan.M.Powell@nws02.usace.army.mil)
- ☒ Attorney General [ecyolvef@atg.wa.gov](mailto:ecyolvef@atg.wa.gov)
- ☒ Muckleshoot Indian Tribe [Karen.Walter@muckleshoot.nsn.us](mailto:Karen.Walter@muckleshoot.nsn.us); [Fisheries.fileroom@muckleshoot.nsn.us](mailto:Fisheries.fileroom@muckleshoot.nsn.us)

City of Bellevue Submittal Requirements	27a
<p style="text-align: center;">ENVIRONMENTAL CHECKLIST</p> <p style="text-align: right;">4/18/02</p>	
<p>If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.</p>	
<p style="text-align: center;">BACKGROUND INFORMATION</p> <p>Property Owner: <u>City of Bellevue – Parks Department</u></p> <p>Proponent: Contact Person: <u>City of Bellevue Utilities Dept. Birol Shaha, PE / Senior Engineer</u> (If different from the owner. All questions and correspondence will be directed to the individual listed.)</p> <p>Address: <u>P.O Box 90012 – Bellevue WA 98009-9012</u></p> <p>Phone: <u>425-452-4477 (Birol Shaha)</u></p>	
<p>Proposal Title: <u>Meydenbauer Bay Park Sewer Line Replacement Project</u></p> <p>Proposal Location: 99<sup>th</sup> Ave NE – <u>Bellevue Meydenbauer Bay Park and Marina (See Exhibit 1)</u> (Street address and nearest cross street or intersection) Provide a legal description if available.(See Exhibit 3) Please attach an 8 ½" x 11" vicinity map that accurately locates the proposal site.</p>	

Give an accurate, brief description of the proposal's scope and nature:

1. **General description:** The Meydenbauer Bay Park Sewer Line Replacement project includes construction of approximately 1,290 linear feet of sewer line that replaces existing 10-inch diameter asbestos cement (AC) sewer pipe located along the shore of Lake Washington. The existing sewer line, constructed in the 1950s, has been subject to structural pipe failures and blockages in the recent past and is partially exposed on the lakebed. The replacement sewer line will be primarily on shore within the existing Meydenbauer Beach Park and Bellevue Marina parking lot. The sewer design is being closely coordinated with the design of the future City Meydenbauer Bay Park to minimize potential impacts.

The replacement sewer line will be approximately 1,500 lineal feet in length and will connect to the existing Lake Line at the northwest corner of the park adjacent to the western edge of the existing dock. There will be approximately 100 +/- feet of in-water construction along the Lake Washington Shoreline, within the City jurisdiction (See Exhibit 2). The existing wastewater from the sewer lake line will be redirected onto the shore to a new underground pump station where the wastewater will be lifted and then flow by gravity to the Grange pump station. The new pump station will be located underneath a future pedestrian promenade. The sewer line then follows an on-shore alignment parallel to the shoreline across the marina parking lot to connect to the existing Grange pump station. Approximately 400 feet of the existing in-water AC sewer line will be removed along the shoreline. The rest of the existing sewer line between the Grange pump station and the west end of the Meydenbauer Bay Park will be flushed and filled with light-weight concrete and remain buried in place.

The primary construction activity will be standard open cut trenching along an upland alignment through the Park and marina parking lot. Approximately 0.6 acres (24,000 sf) of lawn, trees and shrubs will be cleared for the trenching portion of the project. Trees identified by the Parks Department will be protected with fencing during construction of the new sewer line. All disturbed area will be restored to existing grade and hydro-seeded. At the Marina parking lot, an approximately 2,500 sf of paved surface will be impacted by trench excavation and be restored to the original condition. The trenching activity will include approximately 4,500 CY of excavation and 4,000 CY of fill for the sewer line replacement. The installation of the below grade pump station wet well (6-foot-diameter, 30 feet deep precast concrete structure) and valve vault (8-foot x 12-foot, 8 feet height precast concrete structure) will require approximately 200 CY of additional excavation. The excess soil will be placed within the site or dispose offsite. Temporary erosion and sediment control measures will be kept in-place until the site is stabilized. Construction of the in-water trench to connect the new on-shore sanitary sewer will be covered with 2-inch minus round river rock in the upper six (6) inches of the trench to provide for Sockeye spawning in the near shore area of Lake Washington. The proposed on-shore sewer alignment will not affect any existing wetland or wetland buffer (See Exhibit 4).

The project site includes two existing duplex residential buildings. The new sewer line alignment will avoid the southerly duplex, but will run under the northerly duplex shown on the site plan (See Exhibit 2). To avoid permanent loss of housing on-site, the proposed project will use trenchless construction method to bore under the northerly residential duplex. The sewer line will be installed in a steel casing under the duplex between two boring pits where trenchless equipment will be placed and operated. Due to the presence of groundwater in the vicinity, the area around the boring pits may need to be dewatered. The dewatering process will require the collection of groundwater that will be treated and discharged into the existing sanitary sewer system with a permit from King County. No dewatered groundwater from the trench or boring pits will be discharged to Lake Washington.

Replacing the aging sewer lake line at Meydenbauer has been through two earlier design and permitting efforts. As the Parks Department design for the redevelopment and expansion of the Meydenbauer Beach Park was refined, then completed, and as the Utilities Department worked through alternative design solutions, the current sewer replacement design, as discussed above, is has been developed in close coordination with Parks Department's proposed Meydenbauer Beach Park project. The new sewer replacement project include design features from the first two alternatives that minimize many of the Park, housing, and environmental impacts from the first two designs. The current proposed design reduces in-lake construction compared to the second (in-lake replacement) option and eliminates the impacts to wetlands as compared to the two previous designs. The length of the tunneling under existing duplexes is reduced as compared to the first two project designs. A summary comparison of two previous design and currently proposed design is included as Exhibit 9.

The City of Bellevue has adopted a Park Master Plan for the Meydenbauer Bay Park property and Marina Dec. 2010 (Resolution 8182). The Utilities Department proposed sewer line replacement project was identified separately in the City Utilities Department Capital Improvement Plan. The proposed Meydenbauer sewer line replacement project has been designed to be compatible with the most recent detailed park construction plans. - All proposed elements of that master plan, which is a major redevelopment of the park will address final topography, final landscaping, urban design, and habitat enhancement by a proposed day lighting of the unnamed culverted creek at the northwest end of the park.

The proposed sanitary sewer line, including the new pump station is designed to serve the lake front residences and upland residences that are currently served by the existing off shore sanitary sewer. None of the future options, both on shore and off shore, for serving these same residences is precluded by this proposal.

The project will be advertised for bid later this year. Construction is scheduled to begin in December 2016 with the most of construction is scheduled to be completed by May 1, 2017 prior to Parks project construction, except the portion of the work including connecting to the existing in-lake sewer line and removal of 400 feet of the old AC sewer main that is in-water within the limits of Lake Washington, will be completed between July 15 and September 30, 2017 (fish window).

2. Acreage of site: Meydenbauer Beach Park is a 2.5-acre waterfront park with a swimming and water recreation area along the shoreline.
3. Number of dwelling units/buildings to be demolished: N/A
4. Number of dwelling units/buildings to be constructed: N/A
5. Square footage of buildings to be demolished: N/A
6. Square footage of buildings to be constructed: N/A
7. Quantity of earth movement (in cubic yards): 4,700 cy excavation/4,000 cy fill
8. Proposed land use: No Change in land use, sewer line replacement.

Proposed project is for the replacement of aging and failing sewer line within Lake Washington, which does not alter current or future land use. The proposed sanitary sewer line, including the relocated pump station is designed to serve the lake front residences and upland residences that are currently served by the existing in lake sanitary sewer. None of the future Park development plans, both upland and in-water, for serving these same residences is precluded by this proposal.

9. Design features, including building height, number of stories and proposed exterior materials: N/A – All facilities underground with manhole and pump station covers integrated into final restoration.



## 10. Other

Estimated date of completion of the proposal or timing of phasing:

Proposed start date December 2016 and finish date November 2017. The contractor will mobilize to the site and setup the construction staging area (proposed: Marina parking area and an area adjacent to Lake Washington Blvd) and temporary erosion and sedimentation control facilities along the sewer alignment. Connection to the existing sewer lake line within Meydenbauer Bay will be made during the in-water work window as approved by the Army Corps of Engineers and State Fish and Wildlife. The final stages of construction will include surface restoration, hydro-seeding and other necessary restoration activities.

**Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

There are no plans for future additions, expansions or further activity connected with this proposal. There is an ongoing sewer system evaluation effort being conducted currently to identify long-term replacement needs for the overall Bellevue sewer lake line. The potential extent of repairs needed are presently unknown for the overall sewer lake line. Upon completion of the evaluation, the City of Bellevue Utilities Department will make a determination of the priority of repairs, replacement or new construction that may be required.

**List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

- (1) Geotechnical Engineering Report – Relocation of Grange Pump Station (March 19, 1992)
- (2) Biological Evaluation – City of Bellevue 2006 Exposed Sanitary Sewer Lines (Aug 2006)
- (3) Geotechnical Engineering Report – Meydenbauer Bay Sewer Lake Line (March 11, 2010)
- (4) Meydenbauer Beach Park Wetland Delineation and Existing Conditions Memo (November 19, 2012)
- (5) Geotechnical Engineering Report – Meydenbauer Bay Park Phase 1 (February 2015)
- (6) Meydenbauer Bay Park Phase 1 Wetland Delineation Report (April 2015)
- (7) Geotechnical Report - October 2015

**Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.**

The City of Bellevue Parks Department is currently permitting the expansion of the existing active park amenities to the south and east to include extensive pedestrian walkways, a swim beach, daylighted stream, a park building that would support the swim beach and small watercraft, a dock, and limited public parking. The park construction could overlap with the proposed sewer replacement and relocation project if Parks can obtain all necessary permits in time for construction in 2017 which is the calendar year proposed for the Utilities Department sewer replacement and relocation project. The proposed replacement of the sewer lake line is designed to minimize conflicts with the proposed expansion of the existing Meydenbauer Park.

**List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.**

1. City of Bellevue SEPA Checklist and Determination
2. City of Bellevue Shoreline Permit,
3. City of Bellevue Clearing and Grading Permit
4. City of Bellevue Right of Way Permit
5. City of Bellevue Land Use Application
6. US Army Corp – 404 Nationwide Permit
7. US Fish and Wildlife – Section 7 Endangered Species Act Consultation
8. National Marine Fisheries Services – Section 7 Endangered Species Act Consultation
9. Washington State Hydraulic Project Approval (JARPA)

**Please provide one or more of the following exhibits, if applicable to your proposal. (Please check appropriate box(es) for exhibits submitted with your proposal):**

Land Use Reclassification (rezone) Map of existing and proposed zoning

Preliminary Plat or Planned Unit Development  
Preliminary plat map

☒ Plan of existing and proposed grading  
Development plans

☒ Shoreline Management Permit  
Site plan

## A. ENVIRONMENTAL ELEMENTS

### 1. Earth

a. **General description of the site:** Rolling Hilly Steep slopes Mountains Other

b. **What is the steepest slope on the site (approximate percent slope)?**

The steepest slope is upland from the project near the past-single family housing area (approx. 2 to 5% slope).  
The majority of the project site is less than 2% slope on average. (Exhibit 4)

c. **What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.**

Vashon sub glacial till (Qvt) and Vashon Advanced Outwash (Qva)

d. **Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

There are no indications of unstable soils in the project impact area.

e. **Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.**

Overall, there will be approximately 0.6 acres (24,000 sf) of lawn and shrubs along with two substantial trees that will be cleared for sewer installation through unimproved area of the project. This includes approximately 100 feet of sewer line installed in-water along Lake Washington Shoreline, within the City jurisdiction. Across the Marina parking lot, an approximately 2,500 sf of paved surface will be impacted by trench excavation.

The trenching activity will include approximately 4,500 CY of excavation and 4,000 CY of fill for the sewer line replacement. In addition approximately 200 CY will be excavated to install the below grade pump station

wetwell and valve vault construction. The excess soil will either be placed on-site or disposed off-site.

Removal of existing sewer line along the shoreline where a new swim beach is proposed in the Meydenbauer Bay Park expansion project will result in approximately 60 CY of excavation, and 75 CY of fill material that will include native soil and round rock spawning mix.

**f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

It is not anticipated there will be erosion from the disturbed areas of the site due to the implementation of Best Management Practices (BMPs) in conjunction with City regulations and a temporary erosion and sedimentation control plan (TESC) that is reviewed and approved by the City of Bellevue Department of Development Services.

**g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

Approximately 120 square feet of impervious surface including two (2) 4-foot by 3-foot hatch cover and six (6) 48-inch diameter manholes cover. Existing pavement at the Marina parking lot will be stored to original condition.

**h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

Standard BMPs, TESC, and an approved clearing and grading plan will avoid and mitigate any limited impacts to the earth. A floating silt curtain or similar technology will be used to isolate and protect Lake Washington from sediment that might be disturbed during the installation of the new sewer line as it connects to the proposed on shore sewer line or for the proposed removal of portions of the existing sewer line.

## **2. AIR**

**a. What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

There will be limited emissions from fugitive dust and construction vehicles during construction activity.

**b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

None known or anticipated.

**c. Proposed measures to reduce or control emissions or other impacts to the air, if any:**

The contractor will be required to have a vacuum street sweeper will be on-call to be utilized to remove dust and debris from pavement as directed by the City. Standard TESC and BMPs will control fugitive dust emissions and construction vehicle will be using federally regulated exhaust system for vehicle emissions.

## **3. WATER**

**a. Surface**

**(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into it.**

Lake Washington is adjacent to the park and marina and there is an unnamed culverted stream along the northern edge of the park. There are two Class III and one Class IV wetland on site. The palustrine

wetland (Wetland A & Wetland B) associated with the shoreline of the project area are categorized as a Class III wetlands using the 2014 Ecology - Wetland Rating System for Western Washington. The third wetland (Wetland C) is located up slope from the lake and has been categorized as a Class IV wetland due to the low value of its value and functions. None of these wetlands will be disturbed by this sewer replacement project.

**(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans.**

Yes, the project area is within the 200-foot shoreline buffer and a small segment of the sewer line will be placed in the Lake to connect the new onshore sewer line to the existing sewer line at the point where the in-lake sewer line enters the Park property to the north and west.

Approximately 400 feet of the existing in-water sewer line will be removed along the shoreline proposed for a swim beach as part of the Park improvement project. The rest of the existing sewer line between the Grange pump station and the west end of the Meydenbauer Bay Park will be flushed and filled with light-weight concrete and remain buried in place.

**(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

The proposed on-shore sewer alignment will not affect any existing wetlands or wetland buffer (See Exhibit 4). There may be dewatering to facilitate construction between the end of the north dock and the shoreline to allow for placement of the sewer line in-water. It is not anticipated that there will be dredging required for this small in-water work activity.

Removal of existing sewer line along the shoreline where a new swim beach is proposed in the Meydenbauer Bay Park expansion project will result in approximately 60 CY of excavation, and 75 CY of fill material that will include native soil and round rock spawning mix.

**(4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

There will be de-watering between the end of the north dock and the shoreline to allow for placement of the sewer line in-water. A silt curtain will be deployed surrounding the work area needed to connect the new onshore sewer line to the existing off-shore sewer. De-watering is anticipated around the boring pits to the north and south of the residential properties. The de-watering for boring the new sanitary sewer line under the residential structure and discharging it into the sanitary sewer system. This activity will be limited in time and duration. The necessary dewatering operations for connecting the existing sewer line in the lake to the new on shore sanitary sewer and the de-watering related to the pipe boring will comply with applicable local permits, project-specific permits, and regulations.

**(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

No, the proposal does not lie within a 100-year floodplain. (Confirmed via the FEMA Map No. 53033C0652K; Panel 652-51700 12005 – Zone X – Outside of Flood Plain)

**(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

There are not proposed discharges to the surface waters of Lake Washington or wetlands.

**b. Ground**

- (1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description.**

Yes, groundwater will be withdrawn and will be discharged to the sanitary sewer under permits with King County as part of the boring under existing residential structures. Any sediment that collects in the actual boring pits will be treated using a Baker tank type technology and will either be discharged to the sanitary sewer under a permit from King County or will be transported off site for proper disposal.

- (2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

No waste material will be discharged into the ground. The Project's objective is to prevent potential catastrophic failure of the sanitary sewer line in the lake and to allow greater access and monitoring of sewer line conditions for the City of Bellevue Utilities department maintenance team.

**c. Water Runoff (Including storm water)**

- (1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

No proposed changes in runoff, present conditions are lawn with sheet flow runoff and parking lot with an existing system of catch basin/water quality elements. With implementation of a TESC Plan and standard BMPs, there is no anticipated polluted runoff from the project action.

- (2) Could waste materials enter ground or surface waters? If so, generally describe.**

None are anticipated. The new sewer line will be built to current strict design standards and replaces an aging sewer line made of multiple short segments of Asbestos Concrete pipe (AC) that is at the end of its service life.

**d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:**

With implementation of a TESC Plan and standard BMPs there is no anticipated polluted runoff from the project action. In addition, disturbed soils will be stabilized and hydro seeded after construction. Substantial trees planned for retention under the Parks Department plan will be fenced and protected during the sewer and pump station construction.

**4. Plants**

**a. Check or circle types of vegetation found on the site:**

deciduous tree: alder, maple, aspen, other

evergreen tree: fir, cedar, pine, other

shrubs

grass

pasture  
crop or grain  
wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other  
water plants: water lily, eelgrass, milfoil, other  
other types of vegetation

**b. What kind and amount of vegetation will be removed or altered?**

Lawn area will be removed during trenching and replaced to pre-construction conditions. There are two potential significant trees or grouping of trees, just north of 99th Ave NE that will be impacted by the construction (See Exhibit 4) and two trees will be added to the park as mitigation of their removal. Additionally, some ornamental gravel along the beach area will be removed, grid located and replaced. Gravel from the lake will be cataloged as to its grid locations, inventoried, stored temporarily and returned to the same gridded area on the lake bottom. Supplemental gravel, approved by WDFW on gravel size, will be added to in-water work area only as needed.

**c. List threatened or endangered species known to be on or near the site.**

No known threatened or endangered species are on the upland site. In water, species are Chinook salmon, trout, and bullhead trout populations in Lake Washington.

**d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

Standard landscaping in lawn area lawn will be replaced, pursuant to City of Bellevue Parks Department requirements.

## **5. ANIMALS**

**a. Check or circle any birds and animals which have been observed on or near the site or are known to be on or near the site:**

Birds: hawk, heron, eagle, songbirds, other:

Mammals: deer, bear, elk, beaver, other:

Fish: bass, salmon, trout, herring, shellfish, other: *Specific Species Chinook Salmon, Steelhead Trout and Bullhead Trout*

**b. List any threatened or endangered species known to be on or near the site.**

The only known threatened and endangered species are the fish listed above and addressed in the Biological Evaluation that is required for the US Army Corp permit.

**c. Is the site part of a migration route? If so, explain.**

The site is along the western flyway for species that summer in Alaska and winter in the southern 48 states or further to the south.

**d. Proposed measures to preserve or enhance wildlife, if any:**

None proposed for upland area, due to absence of threatened or endangered species. For in-water work, construction associated with installing the proposed sewer line section will cause temporary and localized impacts to water quality (i.e., turbidity), with some de-water activities. With the work being limited to approved Army Corps and Washington Department of Fish & Wildlife Fish work windows, no long-term impacts are anticipated.

The upper six inches of the trench that is constructed to connect the existing off shore sanitary sewer line to the new on shore sanitary sewer line will be covered with 2" minus round river rock to enhance use by Sockeye Salmon for near shore spawning purposes.

## **6. Energy and Natural Resources**

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc.**

Electricity for the pump stations will be the primary source of energy for the completed project.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

No.

- c. What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any:**

Pump station will use modern efficient electric pumps and controllers to reduce runtime and power consumption.

## **7. Environmental Health**

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

None. The project is designed and located to reduce the potential for spills into Lake Washington by removing the sanitary sewer line from the lake. Portions of the existing sewer line will be removed and portions will be filled with light-weight concrete and abandoned in place.

### **(1) Describe special emergency services that might be required.**

Standard emergency response by Fire or Police services in the event of an accident. Emergency services are not anticipated to be required with the completed project and risk of sanitary sewer line failure corrected.

### **(2) Proposed measures to reduce or control environmental health hazards, if any.**

Coordination and notification to adjacent property owners, parks department and Marina during construction activities. Standard construction BMPs will be implemented to prevent any sewer spills during connection construction activities. Use of current state of the art telemetry for continuous monitoring of pumps and overall pump station operation. Inclusion of an independent electrical cable to allow an emergency generator to be located remotely along Lake Washington Blvd to provide backup power in case the pump station experiences an extended power outage.

**b. Noise**

**(1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?**

No known noise that will adversely affect project.

**(2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.**

There will be short-term construction vehicle noise, during daylight hours and as controlled by the City of Bellevue noise ordinance and allowable work hours.

**(3) Proposed measures to reduce or control noise impacts, if any:**

Implementations of standard construction BMP's and confirm contractor vehicles have regulation muffler systems and limit construction to day-light hours. During construction, only current generators will be used and idling equipment will be shut off when not in use.

**8. Land and Shoreline Use**

**a. What is the current use of the site and adjacent properties?**

Two duplexes, Park use , marina, marina parking and vacant land are the current use of the site. There is single family and multi-family housing the east and north of the project area.

**b. Has the site been used for agriculture? If so, describe.**

No.

**c. Describe any structures on the site.**

There are buildings, including the historic Ice House, two residential duplexes and parking lots associated with the Marina (southern portion) of the project action. The park side of the project action area is lawn, sidewalk, picnic tables, restroom facility, and dock on the northern portion.

**d. Will any structures be demolished? If so, what?**

No structure will be demolished under this project action.

**e. What is the current zoning classification of the site?**

(See Exhibit 7)

R-5; R-3.5: Single Family Residential

R-30: Multi-Family Residential

O: Office

**f. What is the current comprehensive plan designation of the site?**

DNTN-OB: Old Bellevue District

SF-M, SF-H: Single Family (Medium to High Density)

MF-H: Multi-Family (High Density)

O: Office



**g. If applicable, what is the current shoreline master program designation of the site?**

The current shoreline master program designation is “Shoreline Overlay District” (20.25E). It is considered an urban environment with Lake Washington as the body of water.

**h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.**

The portions of the project site at or below Ordinary High Water, OHW, and the area 25 feet landward of OHW are designated as a critical area within the City of Bellevue code.

There are two Class III and one Class IV wetland on site. The palustrine wetland (Wetland A & Wetland B) associated with the shoreline of the project area are categorized as a Class III wetlands using the 2014 Ecology - Wetland Rating System for Western Washington. The third wetland (Wetland C) is located up slope from the lake and has been categorized as a Class IV wetland due to the low value of its value and functions. None of these wetlands will be disturbed by this sewer replacement project.

**i. Approximately how many people would reside or work in the completed project?**

The two duplexes will remain occupied after construction of the sewer line and pump station. The existing marina will remain including any jobs associated with boat maintenance or maintenance of the marina.

**j. Approximately how many people would the completed project displace?**

None.

**k. Proposed measures to avoid or reduce displacement impacts, if any:**

Measures to taken by this project to preserve existing residential use include routing the new sewer line around one of the existing duplexes and boring under the other.

**i. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

The project is consistent and with the applicable City Comprehensive Plan Elements and Land Use Code.

**Comprehensive Plan** - The applicable comprehensive plan elements are the Utilities and Shoreline Management:

- Goal # 1 (Utilities Element): To promote and encourage the development and maintenance of all utilities at the appropriate levels of service to accommodate the City of Bellevue’s projected growth.
- Goal # 2 (Utilities): to promote and encourage the provisions of reliable utility service in a way that balances the public’s concerns about safety and health impacts of utility infrastructures, consumers’ interest in paying no more than a fair and reasonable price for the utility’s product, Bellevue’s natural environment and the impacts that utility infrastructures may have on it, and the community’s desire that utility projects be aesthetically compatible with surrounding land uses.
- Goal #1 (Shoreline Mgmt. Element): To protect and enhance the natural and developed shoreline of the City.
- Goal #3 (Shoreline Mgmt. Element): To protect, preserve, and enhance the natural resources and amenities of the city’s shorelines for use and enjoyment by present and future generations.

Land Use Code - the Land Use Code has a several sections that apply to the proposed project. These include:

Land Use Charts in LUC 20.10.440 – The replacement and operation of the sewer line is considered an element of the “local utility system,” and is considered “permitted in both the R-3.5 and R-30 land use zoning districts.

Shoreline Overlay District in LUC 20.25E – The replacement of the sewer lake line requires a Shoreline Substantial Development Permit that must demonstrate compliance with the performance standards for Clearing and Grading contained in LUC 20.25E.080.B & U.

## 9. Housing

**a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

None

**b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

None

**c. Proposed measures to reduce or control housing impacts, if any:**

Avoiding one duplex with the sewer construction and boring/tunneling under the other are proposed measures to control housing impacts. Hours of construction limited to reduce impacts.

## 10. Aesthetics

**a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

Construction is underground - not applicable. The only above ground structure will be an electrical control box to be located near the proposed pump station. This is an operations safety feature to protect maintenance staff working on the pump station. The color and materials will be matched to the Park project materials as they become known. Junction boxes which are flush mounted to the ground or surface may be needed depending on the routing of power cable to the pump station.

**b. What views in the immediate vicinity would be altered or obstructed?**

None

**c. Proposed measures to reduce or control aesthetic impacts, if any:**

None proposed, aside from restoration of landscape to pre-construction status

## 11. Light and Glare

**a. What type of light or glare will the proposal produce? What time of day would it mainly occur?**

There will be no light or glare produced by the proposal.

**b. Could light or glare from the finished project be a safety hazard or interfere with views?**

None.

**c. What existing off-site sources of light or glare may affect your proposal?**

None.

**d. Proposed measures to reduce or control light or glare impacts, if any:**

None.

## **12. Recreation**

**a. What designated and informal recreational opportunities are in the immediate vicinity?**

The project action area is located within the City of Bellevue Meydenbauer Bay Park and Marina.

**b. Would the proposed project displace any existing recreational uses? If so, describe.**

There will be short-term disruption and construction activity in the park during non-peak season.

**c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

Construction activity, within future active park areas, will be limited to non-peak season.

## **13. Historic and Cultural Preservation**

**a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

The "Ice House" is a residential building in the marina portion of the Parks property. The proposed sewer construction project is design to avoid this residence. There is some possibility of uncovering historical or archaeological materials during construction. Project inspection will include an archaeologist to watch materials being removed or disturbed by the project.

**b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site.**

The "Ice House" is an historic building located near the construction alignment. There is also a building known as the "Whaling" building that is located our over Lake Washington. Neither structure will be disturbed with the proposed construction.

**c. Proposed measures to reduce or control impacts, if any:**

None proposed presently. However, if any inadvertent discovery of historic or archeological items during construction, activities will be stopped and cultural resource experts and State Historical Preservation Officer will be contacted for determination and action steps.

## **14. Transportation**

**a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.**

Meydenbauer Way; Bellevue Place SE and 99th Ave NE

**b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

No, the nearest bus lines are routes 249 and 550 on Bellevue Way & Main Street more than a mile away.

**c. How many parking spaces would be completed project have? How many would the project eliminate?**

None proposed or needed. No parking spaces will be eliminated because of the project. The site will only need to be accessed periodically for maintenance.

**d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).**

No requirement for new roads or streets will be created by this project. Access will be from existing streets and through Park site. There will be a maintenance access on the existing sidewalk portion of the park.

**e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

The southern portion of the project is within the City of Bellevue Marina parking lot and adjacent to the docks with boats.

**f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.**

The proposed pump station will be visited by maintenance staff on a monthly basis.

**g. Proposed measures to reduce or control transportation impacts, if any:**

None proposed presently

## **15. Public Services**

**a. Would the project result in an increased need for the public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.**

None anticipated

**b. Proposed measures to reduce or control direct impacts on public services, if any.**

None proposed

## **16. Utilities**

**a. Circle utilities currently available at the site:** electricity, natural gas, water, refuse service, telephone, sanitary sewer, cable tv.

**b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.**

The proposed pump station will need electrical power and a water line to use for occasional cleaning equipment inside the pump station. Electrical power to the pump station will be extended along an

underground conduit. The project will also include telephone and potentially fiber optic connections for the telemetry used to monitor the pumping operations.

The contractor will mobilize to the site and setup the construction staging area (proposed: Marina parking area) and temporary erosion and sedimentation control facilities along the project site. The upland gravity sewer pipe, force main pipe, manholes, service connections, and sewage pump station will be installed and put into service prior to any in-water work. The connection to the existing lake line within Meydenbauer Bay will be made during the approved in-water work window. The final stages of construction will include surface restoration, hydroseeding and Meydenbauer Bay restoration activities including removal of a portion of the existing in-lake sewer line.

### Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature.....Oliver Shaha.....

Date Submitted.....06/23/16.....

## **Meydenbauer Bay Park Sewer Line Replacement Project – List of Exhibits**

- 1. Project Area Map**
- 2. Proposed Sewer Alignment (Future Conditions)**
- 3. Parcel Map and Legal Description**
- 4. Project Plan, Construction Quantities, 200-foot Shoreline and existing Topography**
- 5. Sewer Alignment Alternatives**
- 6. Easements and Zoning**
- 7. Zoning map**
- 8. Comprehensive Plan**
- 9. Meydenbauer Bay Park Sewer Line Replacement Project – Comparison Summary**
- 10. Meydenbauer Bay Park Phase 1 Wetland Delineation Report (April 2015)**



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City of  
Bellevue  
UTILITIES DEPARTMENT

EXHIBIT 1

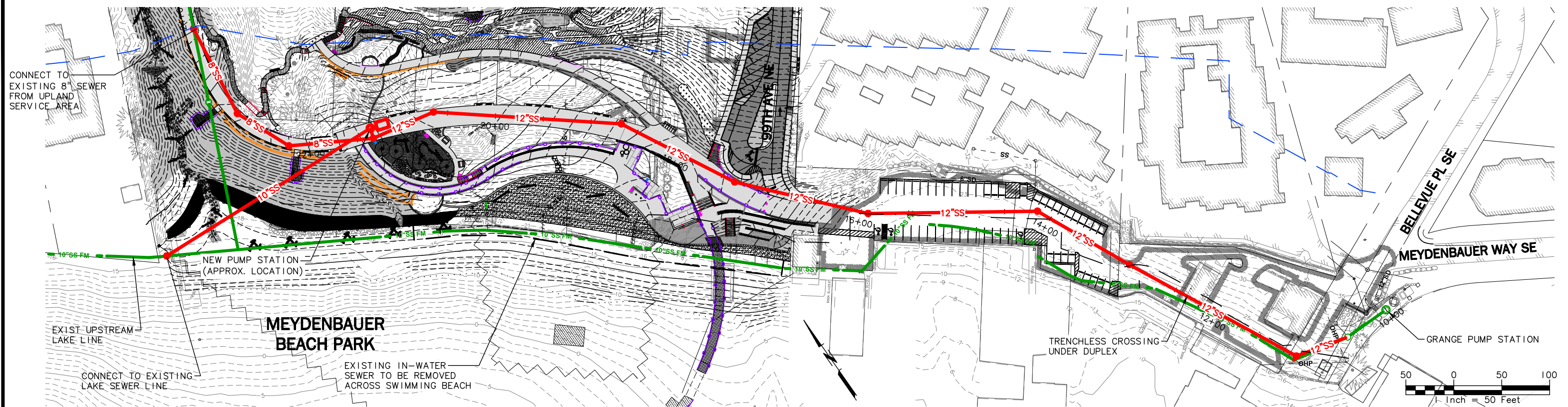
MEYDENBAUER BAY PARK  
SEWER LINE REPLACEMENT

PROJECT AREA MAP

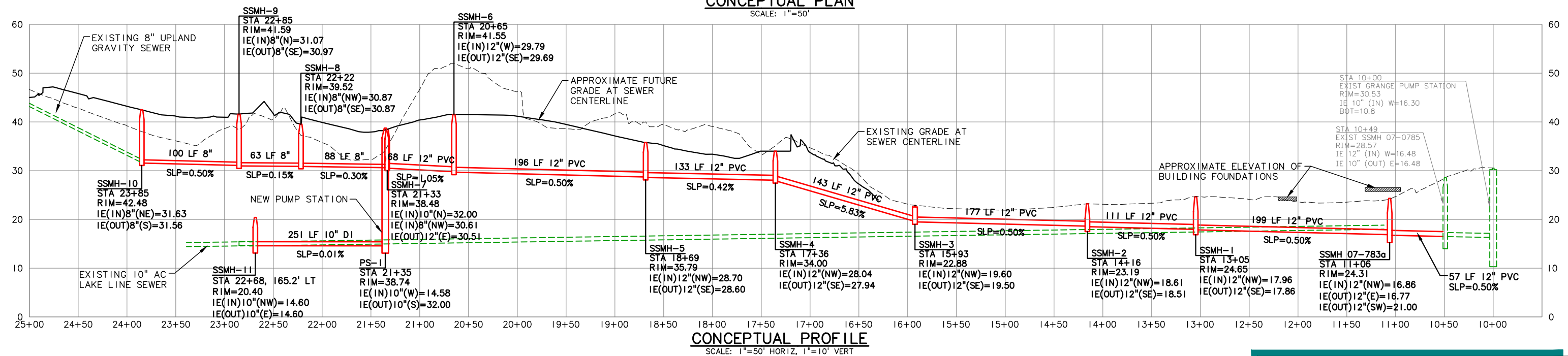
**MSA** Murray Smith & Associates, Inc.  
Engineers/Planners  
2707 Colby Avenue, Suite 1110 PHOENIX 425.252.9003  
Brentwood, Washington 98004-3666 FAX 425.252.8853

JUNE 2016



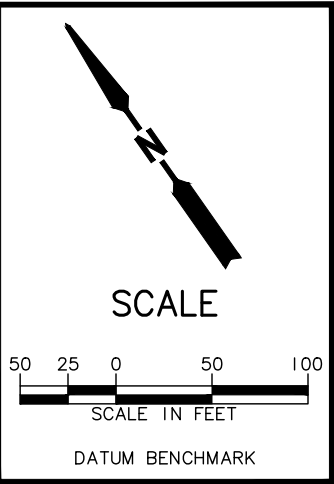
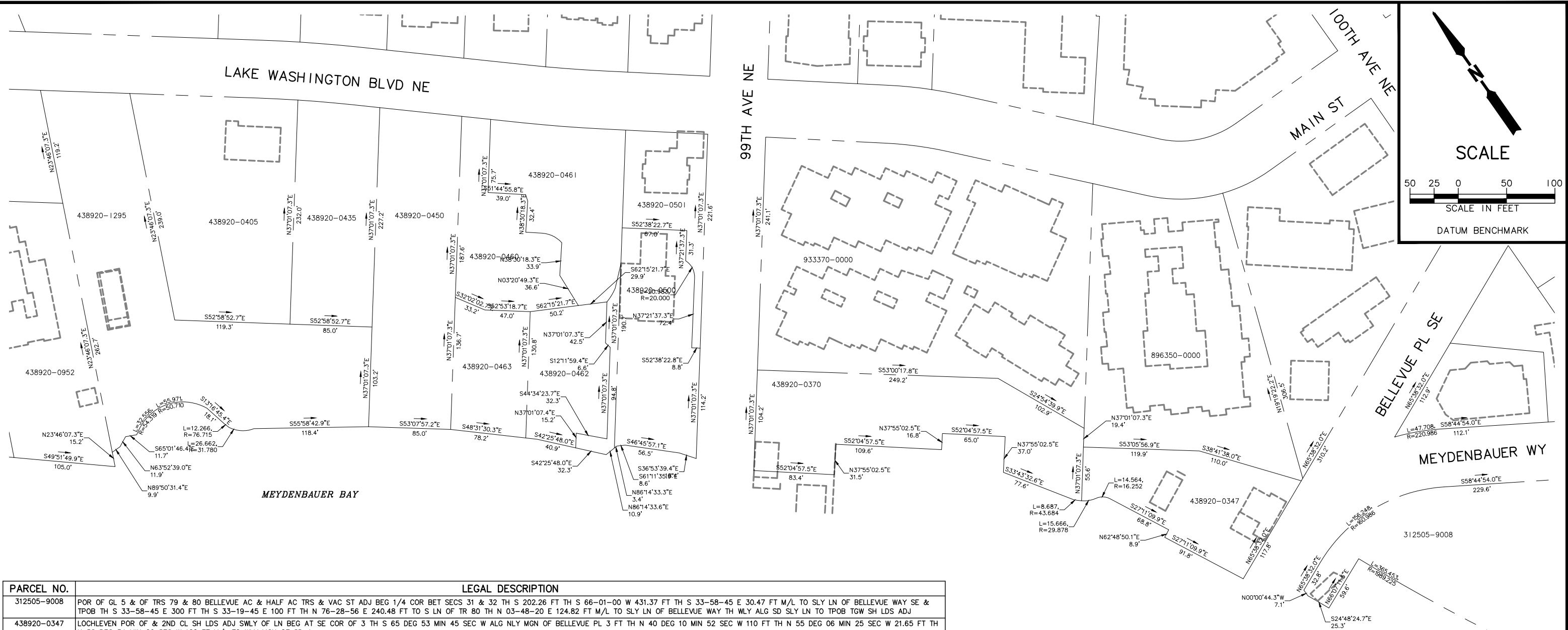


### CONCEPTUAL PLAN





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PARCEL NO.	LEGAL DESCRIPTION
312505-9008	POR OF CL 5 & OF TRS 79 & 80 BELLEVUE AC & HALF AC TRS & VAC ST ADJ BEG 1/4 COR BET SECS 31 & 32 TH S 202.26 FT TH S 33-58-45 E 30.47 FT M/L TO SLY LN OF BELLEVUE WAY SE & TPOB TH S 33-58-45 E 300 FT TH S 33-19-45 E 100 FT TH N 76-28-56 E 240.48 FT TO S LN OF TR 80 TH N 03-48-20 E 124.82 FT M/L TO SLY LN OF BELLEVUE WAY TH WLY ALG SD SLY LN TO TPOB TGW SH LDS ADJ
438920-0347	LOCHLEVEN POR OF & 2ND CL SH LDS ADJ SWLY OF LN BEG AT SE COR OF 3 TH S 65 DEG 53 MIN 45 SEC W ALG NLY MGN OF BELLEVUE PL 3 FT TH N 40 DEG 10 MIN 52 SEC W 110 FT TH N 55 DEG 06 MIN 25 SEC W 21.65 FT TH N 52 DEG 34 MIN 00 SEC W 100 FT M/L TO WLY MGN OF SD 4
438920-0370	LOCHLEVEN PARCEL 4 BELLEVUE SHORT PLAT NO 77-59 REVISED REC NO 7803280870 BEING A REVISION OF REC NO 7712200782 SD PLAT DAF - LOTS 5 THRU 8 & POR VAC ST ADJ TGW SH LDS ADJ
438920-0405	LOCHLEVEN POR DAF - BAAP OF NXN BTWN SE LN OF SD LOT 2 & SW MGN OF SD RD TH SWLY ALG SD SE LN 131.95 FT TH N 54-48-04 W 86.09 FTTH N 37-01-52 E 135.35 FT TO SW MGN OF SD RD TH SELY ALG SD RD MGN TO POB - AKA MONTGOMERY LIFE ESTATE
438920-0435	LOCHLEVEN POR SWLY OF NE LAKE WASH BLVD & NELY OF LN RNNG S 54 DEG 26 MIN 00 SEC E FR PT ON NWLY LN 232 FT SWLY OF NE LK WASH BLVD
438920-0450	LOCHLEVEN POR SWLY OF LK WASH BLVD & SH LDS ADJ
438920-0460	LOCHLEVEN LOT 1 OF BEL SP 79-47 REC # 800327-9001 LESS POR DAF BEG MOST NLY COMM COR TO LOTS 1 & 2 OF SD SP TH S 39-13- 50 W 30 FT TH S 17-00-37 W 46.86 FT TH N 53-00-09 W 38.94 FT TH N 37-01-25 E 75.73 FT TAP ON NELY LN OF SD LOT 1 TH S 48-56-28 E ALG NELY LN OF SD LOT 123.20 FT TAP OF CRV TH CONT SELY ALG SD LN ON A CRV TO LFT HAVING RAD OF 1462.38 FT THRU A C/A OF 00-02-10 AN ARC DIST OF 0.92 FT TO POB SD SP DAF - POR OF LOTS 5 & 6 BLK 7 SD SUBD LY SWLY OF LK WASH BLVD TGW 2ND CLASS SH LDS ADJ AKA LOT 1 OF BEL BLA 92-958 PER REC #9208049001
438920-0461	LOCHLEVER LOT 2 OF BEL SP #79-47 REC #800327-9001 TGW TR A (REMAINDER); TR B; TRS C-1; C-2; C-3 & C-4 AS DISCLOSED IN REC #890626-0329 TGW POR POR LOT 1 OF SD SP DAF - BEG AT NLY COR COMMON TO LOTS 1 & 2 OF SD SP TH S 39-13-50 W 30 FT TH S 17-00-37 W ALG SD LN 46.86 FT TH N53-00-09 W 38.94 FT TH N 37-01-25 E 75.73 FT TAP ON NELY LN OF SD LOT 1 TH S 48-56-28 E ALG NELY LN OF SD LOT 1 23.20 FT TAP OF CRV TH CONT SELY ALG SD LN ON A CRV TO LFT HAVING RAD OF 1462.38 FT THRU A C/A OF 00-02-10 AN ARC DIST OF 0.92 FT TO POB - AS DESC IN BELLEVUE LLA #92-958 REC #9208049001 - SITE SP #79-47 IS DESC AS POR OF LOTS 5 & 6 BLK 7 SD SUBD LY SWLY OF LK WASH BLVD TGW 2ND CLASS SH LDS ADJ
438920-0462	LOCHLEVEN LOT 3 OF BEL SP #79-47 REC # 800327-9001 SD SP DAF - POR OF LOTS 5 & 6 BLK 7 SD SUBD LY SWLY OF LK WASH BLVD LESS POR OF SD LOT 3 WITHIN TRS B & D AS DESC IN REC #890626-0329 TGW TR D AS DESC IN REC # 890626-0329 TGW 2ND CL SH LDS ADJ
438920-0463	LOCHLEVEN LOT 4 OF BEL SP #79-47 REC #800327-9001 SD SP DAF - POR OF LOTS 5 & 6 BLK 7 SD SUBD LY SWLY OF LK WASH BLVD TGW 2ND CLASS SH LDS ADJ
438920-0500	LOCHLEVEN LOT 1 TGW 2ND CL SH LDS ADJ BELLEVUE SP #CSPS-88-5837 REC #8901069001 SD SP DAF POR LOT 7 LY SWLY OF HWY
438920-0501	LOCHLEVEN LOT 2 BELLEVUE SP #CSPS-88-5837 REC #8901069001 SD SP DAF POR LOT 7 LY SWLY OF HWY
438920-0952	LOCHLEVEN BEG AT NXN OF NWLY LN & SWLY LN OF NE LK WASH BLVD TH SWLY ALG SD NWLY LN 116 FT TH S 52 DEG 34 MIN 00 SEC E 165 FT TO TPOB TH CONTG S 52 DEG 34 MIN 00 SEC E 104.61 FT TO SELY LN OF LOT TH S 24 DEG 11 MIN 00 SEC W ALG SD SLY LN TO SH OF LAKE TH NWLY ALG SH TO PT S 24 DEG 11 MIN 00 SEC W OF TPOB TH N 24 DEG 11 MIN 00 SEC E TO TPOB & SH LDS ADJ LESS UND INT TGW 1/3 UND INT IN FOLG BEG NXN OF NWLY LN SD LOT 19 & SWLY LN OF SD NE LK WASH BLVD TH SELY ALG SD BLVD LN 117.7 FT TO TPOB TH CONTG ALG SD BLVD 20 FT TH S 37-26-00 W 30.92 FT TH S 06-00-00 W 99.72 FT TH S 82-23-00 W 28.28 FT TH N 52-34-00 W 62.01 FT TH N 44-00-00 E 20.13 FT TH ALG CRV LFT RAD 28.66 FT C/A BRG N 44-00-00 E FR LAST DESC PT 60.73 FT TH N 06-00-00 E 32.11 FT TH N 37-26-00 E 45 TO TPOB
438920-1295	LOCHLEVEN POR OF LOTS 1 & 2 BLK 7 LY SWLY OF NE LK WASHINGTON BLVD LESS POR DAF - BAAP OF NXN SE LN OF SD LOT 2 & SW MGN OF SD RD TH SWLY ALG SD SE LN 131.95 FT TH N 54-48-04 W 86.09 FT TH N 37-01-52 E 135.35 FT TO SW MGN OF SD RD TH SELY ALG SD RD MGN TO POB (AKA MONTGOMERY LIFE ESTATE) - TGW POR OF SD LOT 1 LY NELY OF SD RD LESS NELY 150 FT & TGW POR OF LOT 3 BLK 7 LY SWLY OF A LN RUNNING S 54-26 E FAP ON NW LN THOF LY 232 FT SWLY OF SW MGN OF SD RD & TGW EAST PARK & WEST PARK & RESERVE OF SD ADD & TGW SH LDS ADJ
896350-0000	N/A - SEE NOTE 3
933370-0000	N/A - SEE NOTE 3

PLAN  
SCALE: 1"=50'

NOTES:

- LEGAL DESCRIPTIONS FROM KING COUNTY PARCEL VIEWER, ACCESSED JULY 19, 2012.
- PARCEL BOUNDARY INFORMATION FROM CITY OF BELLEVUE AS OF MARCH 15, 2012.
- INDIVIDUAL CONDOMINIUMS ON PARCEL HAVE THEIR OWN PARCEL NUMBER AND LEGAL DESCRIPTIONS.

NO	DATE	BY	APPR	REVISIONS



Murray Smith & Associates, Inc.  
Engineers/Planners  
2707 Colby Avenue, Suite 1110  
Everett, Washington 98201-3566  
PHONE 425.252.9003  
FAX 425.252.8853

Approved By	
UTILITIES ENGINEERING MANAGER	DATE
PROJECT MANAGER	DATE

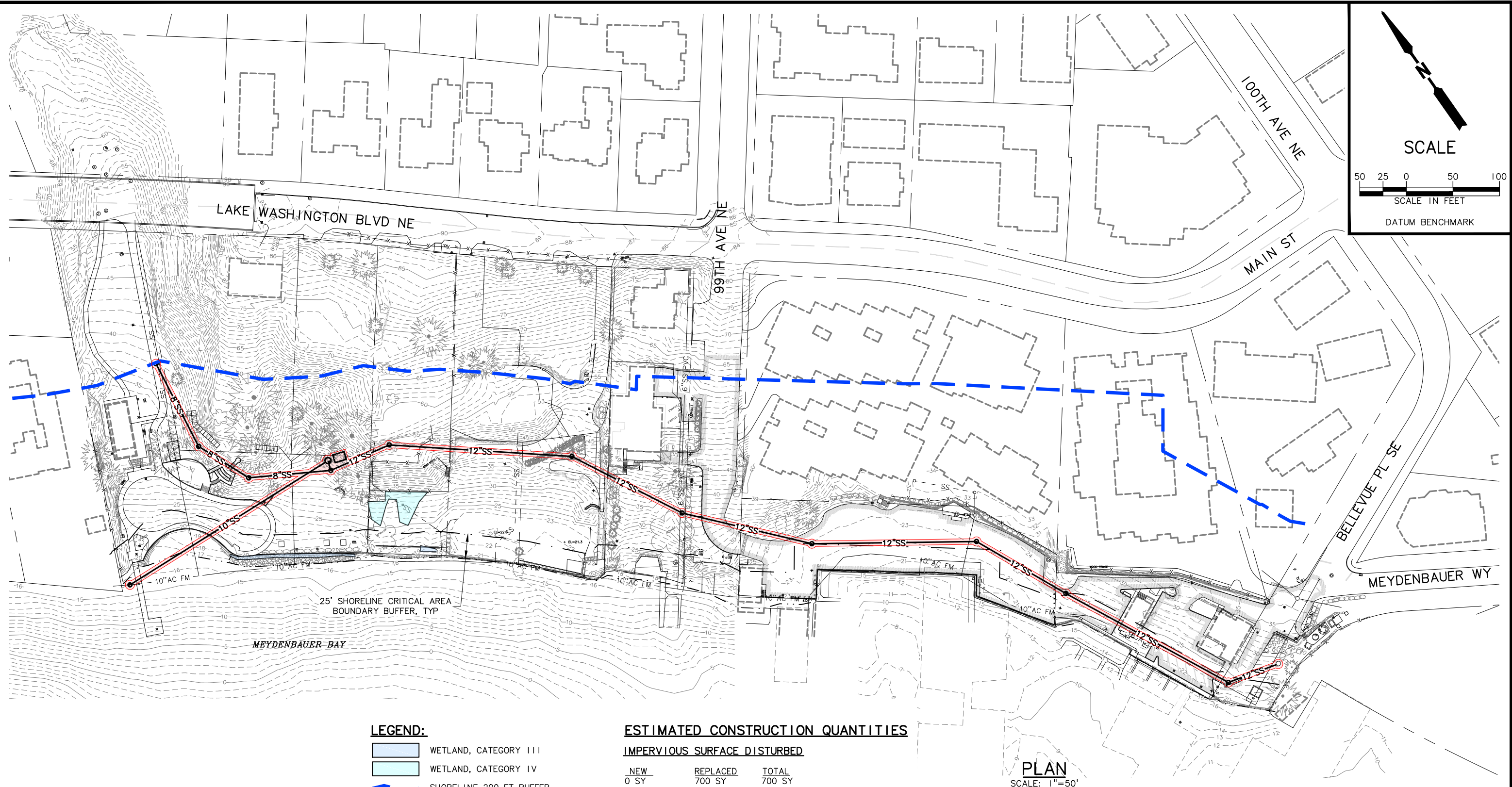
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DESIGNED BY	DATE
HCM	6/21/16
DRAWN BY	DATE
TJP	6/21/16
CHECKED BY	DATE



City of  
Bellevue  
UTILITIES DEPARTMENT

MEYDENBAUER BAY PARK SEWER LINE REPLACEMENT	
PARCEL MAP AND LEGAL DESCRIPTIONS	
SEC 31 TWP 25 RGE 5	EXHIBIT 3

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NOTES:

1. SHORELINE SHOWN IS APPROXIMATE OHWM (18.67' BASED OFF OF NAVD 88) BASED OFF OF DECEMBER 21, 2009 SURVEY. DURING TIME OF SURVEY, LAKE WASHINGTON WAS AT OLWM.
2. WETLAND AS DELINEATED BY ANCHOR QEA IN 2015.

LEGEND:

- WETLAND, CATEGORY III
- WETLAND, CATEGORY IV
- SHORELINE 200 FT BUFFER
- DIGGING/ TRENCHING IMPACT AREA
- SHORELINE CRITICAL AREA 25 FT BUFFER

ESTIMATED CONSTRUCTION QUANTITIES

IMPERVIOUS SURFACE DISTURBED

NEW	REPLACED	TOTAL
0 SY	700 SY	700 SY

GRADING QUANTITIES

CUT: 4,500 CY FILL: 4,000 CY

GRAVEL REPLACEMENT IN MEYDENBAUER BAY:

15 CY

NO	DATE	BY	APPR	REVISIONS

**MSA** Murray Smith & Associates, Inc.  
Engineers/Planners  
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Everett, Washington 98201-3566 FAX 425.252.8853

Approved By

UTILITIES ENGINEERING MANAGER DATE  
PROJECT MANAGER DATE

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City of  
Bellevue

UTILITIES DEPARTMENT

MEYDENBAUER BAY PARK SEWER LINE  
REPLACEMENT

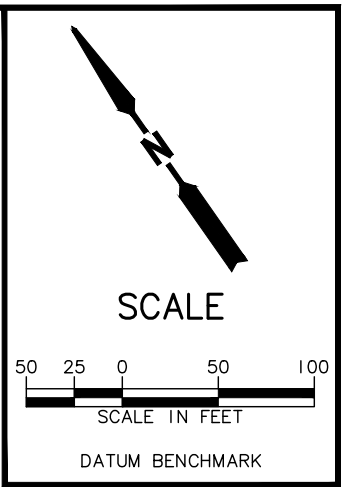
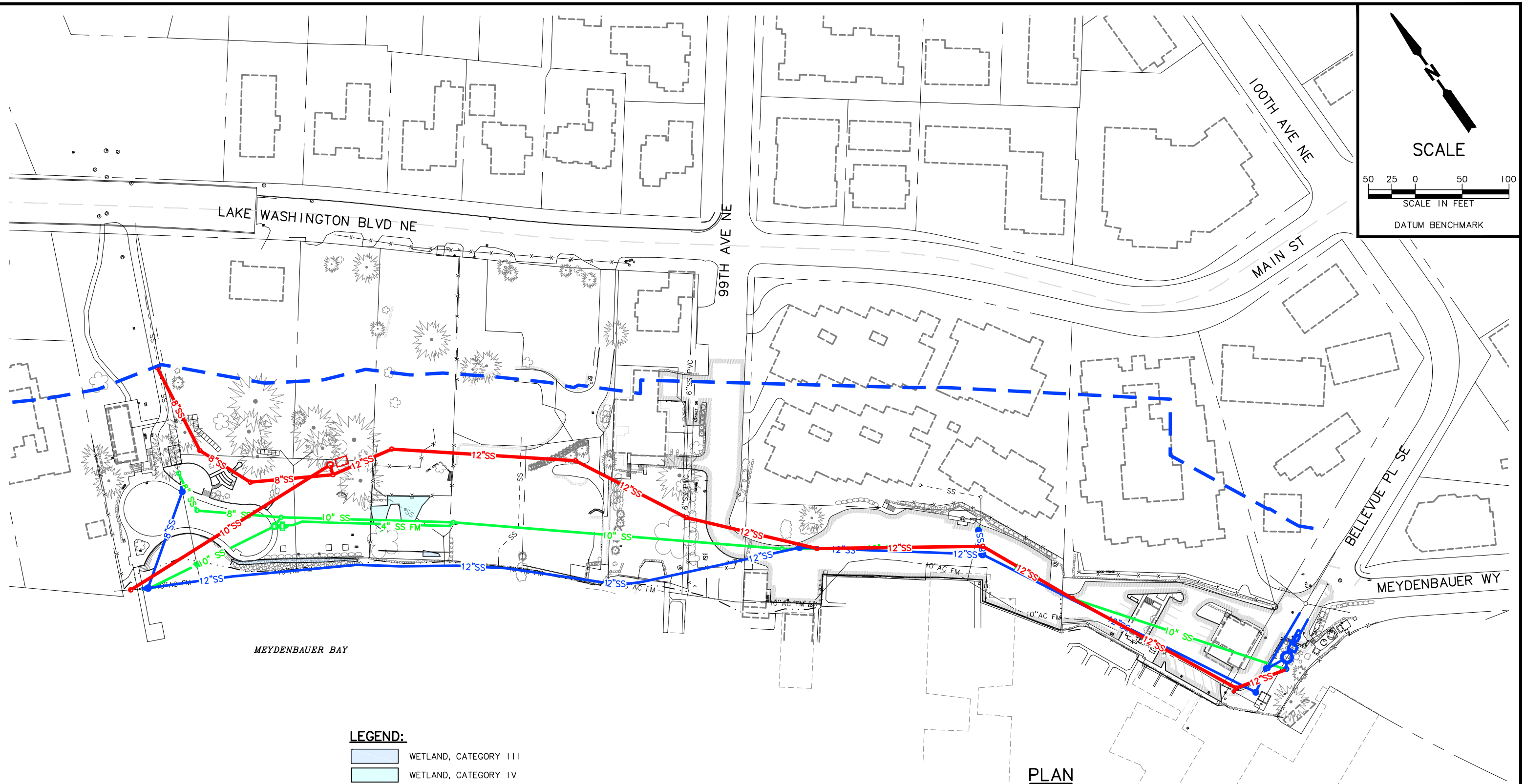
PROJECT PLAN, CONSTRUCTION  
QUANTITIES, 200-FOOT SHORELINE

SEC 31 TWP 25 RGE 5

EXHIBIT 4



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**NOTES:**

1. SHORELINE SHOWN IS APPROXIMATE OHWM (18.67' BASED OFF OF NAVD 88) BASED OFF OF DECEMBER 21, 2009 SURVEY. DURING TIME OF SURVEY, LAKE WASHINGTON WAS AT OLWM.

2. WETLAND AS DELINEATED BY ANCHOR QEA IN 2015.

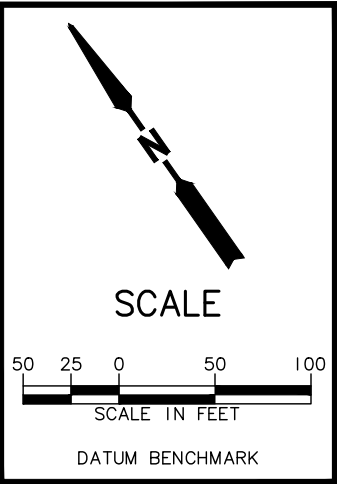
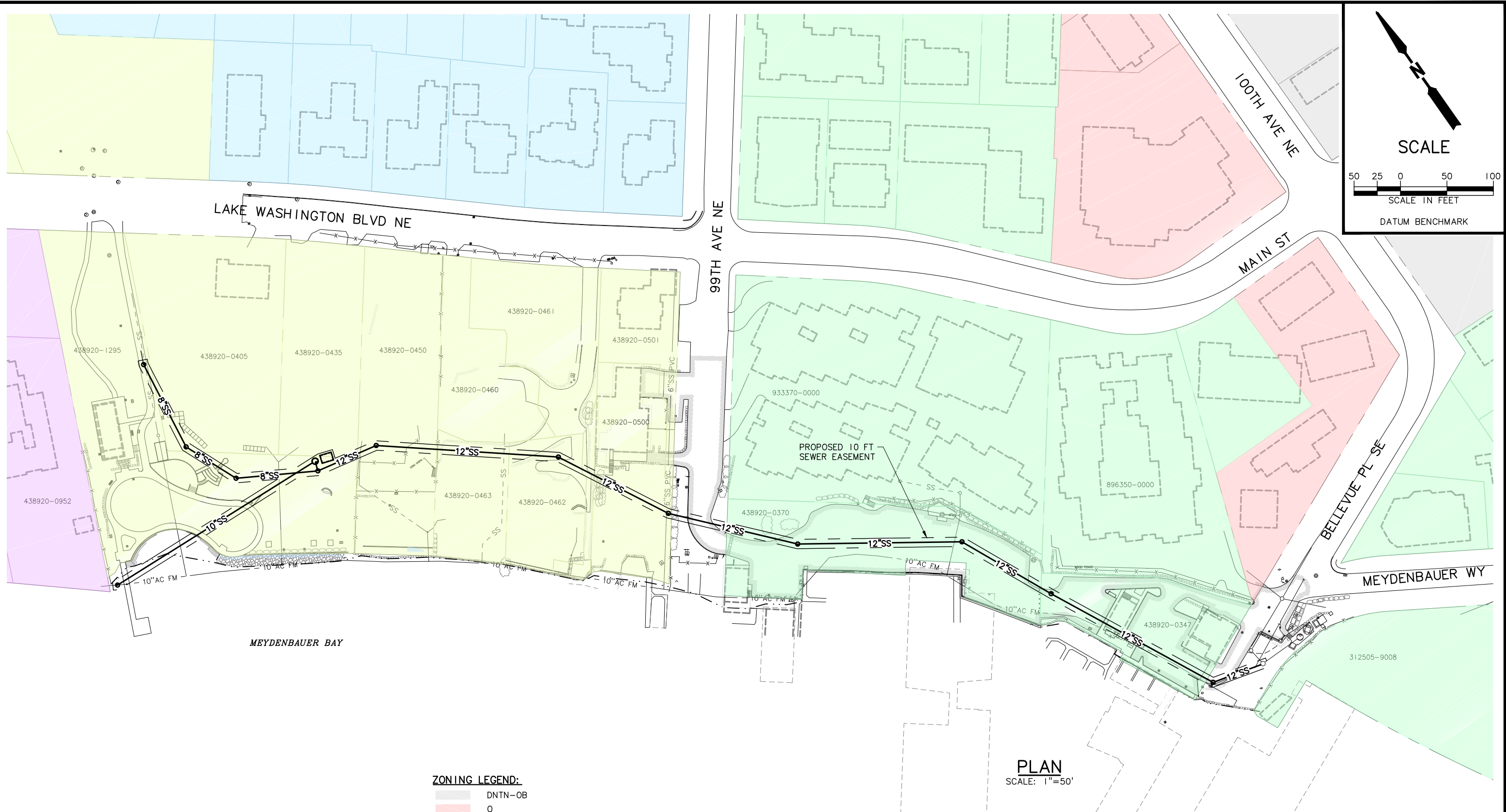
- LEGEND:**
- WETLAND, CATEGORY III
  - WETLAND, CATEGORY IV
  - SHORELINE 200 FT BUFFER
  - PREVIOUS UPLAND SEWER ALIGNMENT
  - PREVIOUS IN-WATER SEWER ALIGNMENT
  - NEW UPLAND SEWER ALIGNMENT

**PLAN**  
SCALE: 1"=50'

NO	DATE	BY	APPR	REVISIONS

<b>Murray Smith &amp; Associates, Inc.</b> <b>Engineers/Planners</b> 2707 Colby Avenue, Suite 1110    PHONE 425.252.9003 Everett, Washington 98201-3566    FAX 425.252.8853	<b>Approved By</b>  UTILITIES ENGINEERING MANAGER    DATE  PROJECT MANAGER    DATE	SMRT    6/21/16 DESIGNED BY    DATE HCM    6/21/16 DRAWN BY    DATE TJP    6/21/16 CHECKED BY    DATE	<b>City of Bellevue</b> UTILITIES DEPARTMENT	<b>MEYDENBAUER BAY PARK SEWER LINE REPLACEMENT</b>	
				<b>SEWER ALIGNMENT ALTERNATIVES</b>	
				SEC 31 TWP 25 RGE 5	EXHIBIT 5

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- NOTES:**
1. SHORELINE AS SURVEYED ON DECEMBER 21, 2009. (OLWM)
  2. ZONING FROM CITY OF BELLEVUE'S GIS DATA, JUNE 10, 2016.

**ZONING LEGEND:**

	DNTN-OB
	O
	R-1.8
	R-3.5
	R-5
	R-30

**PLAN**  
SCALE: 1"=50'

NO	DATE	BY	APPR	REVISIONS



**Murray Smith & Associates, Inc.**  
**Engineers/Planners**  
2707 Colby Avenue, Suite 1110    PHONE 425.252.9003  
Everett, Washington 98201-3566    FAX 425.252.8853

Approved By	
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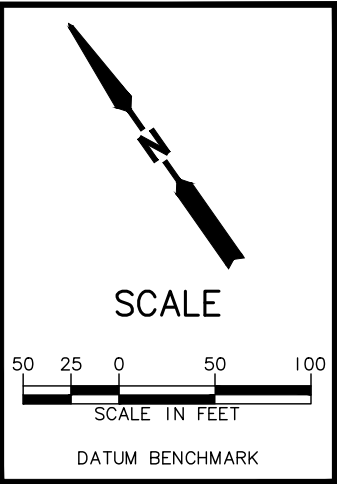


**City of  
Bellevue**  
UTILITIES DEPARTMENT

<b>MEYDENBAUER BAY PARK SEWER LINE REPLACEMENT</b>	
<b>EASEMENTS AND ZONING</b>	
SEC <u>31</u> TWP <u>25</u> RGE <u>5</u>	<b>EXHIBIT 6</b>



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**ZONING LEGEND:**

	DNTN-OB
	O
	R-1.8
	R-3.5
	R-5
	R-30

- NOTES:**
- SHORELINE AS SURVEYED ON DECEMBER 21, 2009. (OLWM)
  - ZONING FROM CITY OF BELLEVUE'S GIS DATA, JUNE 10, 2016.

**PLAN**  
SCALE: 1"=50'

NO	DATE	BY	APPR	REVISIONS



**Murray Smith & Associates, Inc.**  
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2707 Colby Avenue, Suite 1110    PHONE 425.252.9003  
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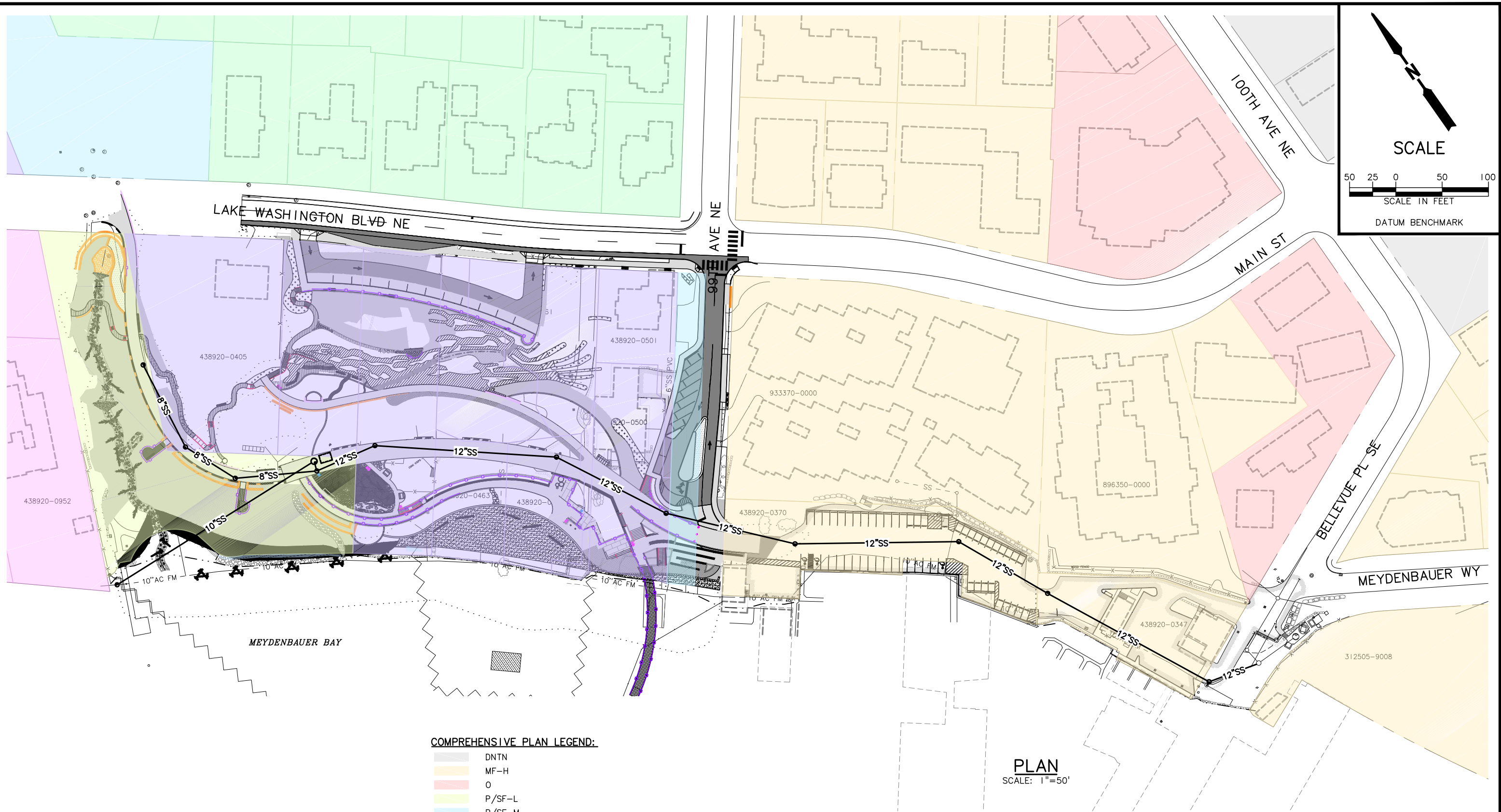


**City of  
Bellevue**  
UTILITIES DEPARTMENT

MEYDENBAUER BAY PARK SEWER LINE REPLACEMENT	
ZONING	
SEC 31 TWP 25 RGE 5	EXHIBIT 7



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COMPREHENSIVE PLAN LEGEND:

- DNTN
- MF-H
- O
- P/SF-L
- P/SF-M
- SF-H
- SF-L
- SF-M

NOTES:

- SHORELINE AS SURVEYED ON DECEMBER 21, 2009. (OLWM)
- COMPREHENSIVE PLAN FROM CITY OF BELLEVUE'S GIS DATA, JUNE 10, 2016.

NO	DATE	BY	APPR	REVISIONS

MSA

Murray Smith & Associates, Inc.

Engineers/Planners

2707 Colby Avenue, Suite 1110  
Everett, Washington 98201-3566

PHONE 425.252.9003  
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Approved By	
UTILITIES ENGINEERING MANAGER	DATE
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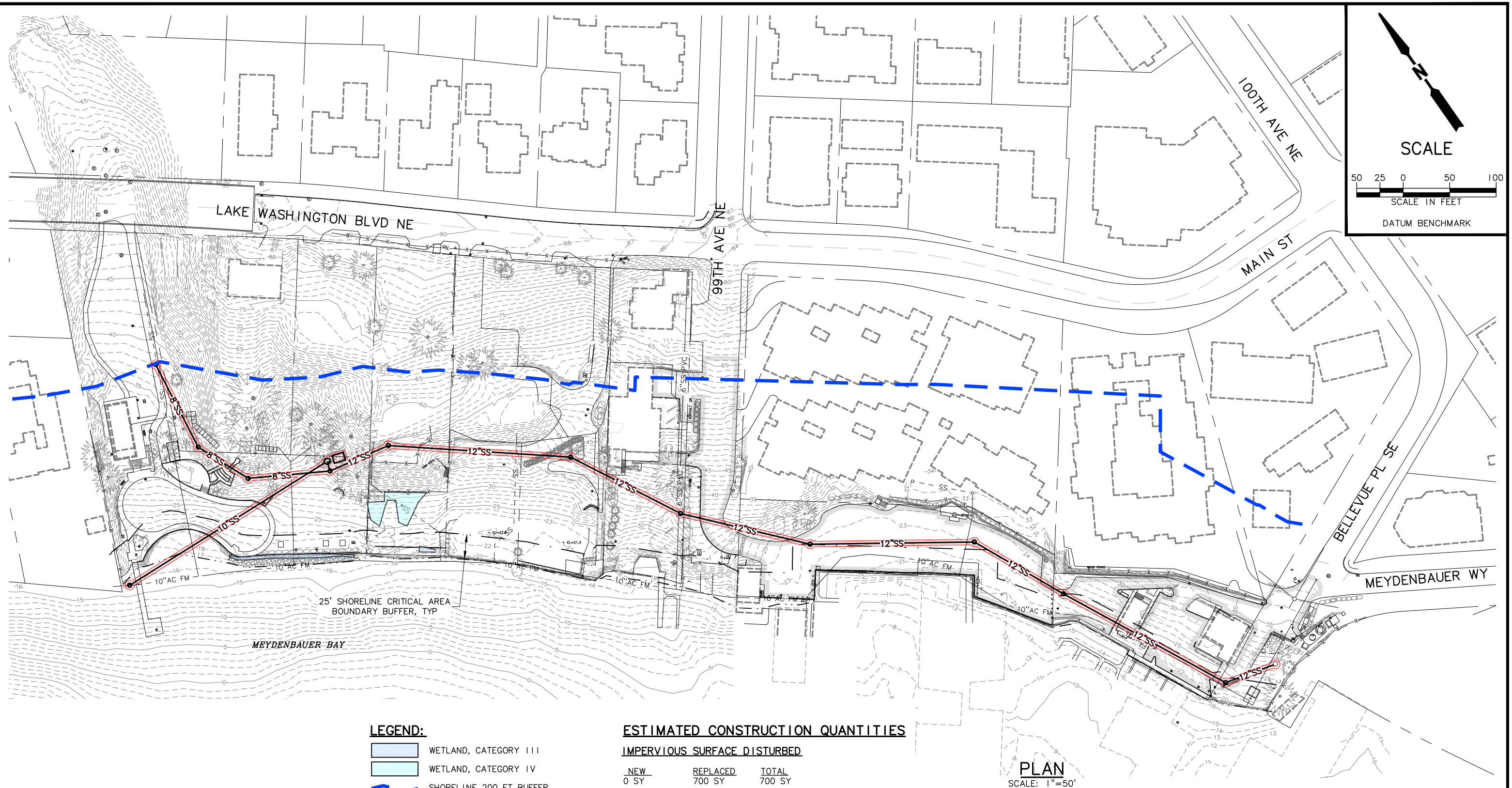


City of  
Bellevue  
UTILITIES DEPARTMENT

MEYDENBAUER BAY PARK SEWER LINE REPLACEMENT	
COMPREHENSIVE PLAN	
SEC 31 TWP 25 RGE 5	EXHIBIT 8



H:\EVT\_Projects\15\1700 Bellevue\_Meydenbauer\CAD\Meydenbauer\3.0\EXHIBITS\EXHIBITS.dwg EXHIBIT 4 Plot Date: 6/21/2016 10:33 AM Plotted by: HCM v2012



NOTES:

1. SHORELINE SHOWN IS APPROXIMATE OHWM (18.67' BASED OFF OF NAVD 88) BASED OFF OF DECEMBER 21, 2009 SURVEY. DURING TIME OF SURVEY, LAKE WASHINGTON WAS AT OLWM.
2. WETLAND AS DELINEATED BY ANCHOR QEA IN 2015.

LEGEND:

- WETLAND, CATEGORY III
- WETLAND, CATEGORY IV
- SHORELINE 200 FT BUFFER
- DIGGING/ TRENCHING IMPACT AREA
- SHORELINE CRITICAL AREA 25 FT BUFFER

ESTIMATED CONSTRUCTION QUANTITIES

IMPERVIOUS SURFACE DISTURBED

NEW	REPLACED	TOTAL
0 SY	700 SY	700 SY

GRADING QUANTITIES

CUT: 4,500 CY FILL: 4,000 CY

GRAVEL REPLACEMENT IN MEYDENBAUER BAY:

15 CY

NO	DATE	BY	APPR	REVISIONS



**Murray Smith & Associates, Inc.**  
**Engineers/Planners**  
2707 Colby Avenue, Suite 1110 PHOEN 425.252.9003  
Everett, Washington 98201-3566 FAX 425.252.8853

Approved By

UTILITIES ENGINEERING MANAGER DATE  
PROJECT MANAGER DATE

SMRT 6/21/16  
DESIGNED BY DATE  
HCM 6/21/16  
DRAWN BY DATE  
TJP 6/21/16  
CHECKED BY DATE



City of  
Bellevue

UTILITIES DEPARTMENT

MEYDENBAUER BAY PARK SEWER LINE  
REPLACEMENT

PROJECT PLAN, CONSTRUCTION  
QUANTITIES, 200-FOOT SHORELINE

SEC 31 TWP 25 RGE 5

EXHIBIT 4

## Exhibit 9

Meydenbauer Bay Sewer Line Replacement Project - Comparison Summary			
Project Description & Features	2012	2015	2016
Total Linear ft. of Sewer Line Replaced	1,400'	1,395'	1,500'
Linear ft. of Pipe On-Shore-shore	1,300'	835'	1,405'
New Sewer Line Installed below Ordinary High Water (Linear Feet)	100'	560'	95'
Connection to Lakeline at the dock	Yes, w/ fittings	Yes, w/ manhole	Yes, w/ manhole
Lift/Pump Station in Park	Yes	No	Yes
Improvements /Rehabilitation of Grange Pump Station	No	Yes	No
Existing sewer line below Ordinary High Water (OHW) removed or abandoned in-place	None is removed, 630' abandoned in-place	All in-lake sewer line is removed (630')	400' is removed and 230' is abandoned in the lake
<b>Project Impacts:</b>			
Impacts to residential duplexes	Bore (Tunnel) under two duplexes	Long (250') Bore (Tunnel) under one duplex, and adjacent of one duplex	Short (60') Bore (Tunnel) under one duplex, open trench around one duplex
Anticipated construction duration in Lake Washington (below OWH)	2-3 weeks	10 weeks	2-3 weeks
<b>Shoreline Impacts</b>			
Length & depth of disturbance below Ordinary High Water (OHW)	100 LF sewer installed @ 2' to 3' depth	560 LF sewer installed @ 2' to 5' depth, 630 LF existing sewer removed @ 2' depth, 10'Wx15'Lx10' deep receiving pit for trenchless construction	95 LF sewer installed @ 2' to 3' depth, 400 LF existing sewer removed @ 2' depth
Rock bulkhead on Shoreline Impacted	No	Yes	No
Cubic Yards of Cut and Fill disturbance below Ordinary High Water (OHW)	40 Cubic Yards	500 Cubic Yards	100 Cubic Yards
<b>Wetland Impacts</b>			
Class IV wetlands	Yes – 1,130 Sq ft of disturbance	Yes – 567 Sq ft of disturbance	None
Class III wetlands	None	Yes – 523 Sq ft of disturbance	None



# WETLAND DELINEATION REPORT

## MEYDENBAUER BAY PARK PHASE 1

---

### **Prepared for**

City of Bellevue

Parks and Community Services Department

450 110th Avenue NE

Bellevue, Washington 98009-9012

### **Prepared by**

Anchor QEA, LLC

720 Olive Way, Suite 1900

Seattle, Washington 98101

**April 2015**



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Appendix B	Field Data Forms
Appendix C	Washington State Department of Ecology Wetland Rating Forms

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## LIST OF ACRONYMS AND ABBREVIATIONS

BCC	Bellevue City Code
CAO	Critical Areas Ordinance
City	City of Bellevue
Corps	U.S. Army Corps of Engineers
Ecology	Washington State Department of Ecology
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
HGM	hydrogeomorphic
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland
OHWM	Ordinary High Water Mark
PEM	Palustrine emergent
PHS	Priority Habitats and Species
Plan	Meydenbauer Bay Park and Land Use Plan
Project	Meydenbauer Bay Park Phase 1
Report	Wetland Delineation Report
sf	square feet
UPL	obligate upland
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish & Wildlife



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## 1 INTRODUCTION

On June 10, 2014, Anchor QEA, LLC, performed a wetland delineation of the Meydenbauer Bay Park (Project area) in the City of Bellevue (City), King County, Washington, Township 25 North, Range 5 East, Section 31. Anchor QEA ecologists also performed a wetland rating and functional analysis of wetland habitat delineated within the Project area. A vicinity map is shown in Figure 1a, and an aerial photograph of the Project area is shown in Figure 1b.

This Wetland Delineation Report (Report) documents wetland resources in the Project area by providing information regarding the presence of wetlands and streams, as defined in the Bellevue City Code (BCC) Critical Areas Ordinance (CAO). The wetland boundaries provided in this Report document the existing conditions within the Project area and are intended to be used as part of the Meydenbauer Bay Park Phase 1 Critical Areas Report and the proposed Project permitting and land use approvals.

The proposed Project seeks to implement a portion of the Meydenbauer Bay Park and Land Use Plan (Plan). The Project is the City's first phase in a long-term vision to "provide unequaled waterfront amenities and connect the waterfront to Downtown Park and downtown." This vision will require a multi-phase effort to implement the full Plan. The Project proposes various elements designed to create a memorable waterfront park while balancing the Project site's natural setting with public access opportunities. The Project includes habitat restoration, active and passive recreation, universal access for a variety of users, particularly pedestrians, and existing building upgrades.

Three wetlands were identified within the Project area, identified as Wetlands A, B, and C (Figure 2). The following sections of this report describe the methods used in the field investigation and Anchor QEA's findings. A description of the study area is included in Section 2, and summaries of the findings of the wetland delineation are included in Section 3. A summary of data collected at each sampling plot during the wetland delineation is presented in Appendix A, wetland field data forms are in Appendix B, and the Washington State Department of Ecology (Ecology) Wetland Rating Forms are included in Appendix C.

## **1.1 Review of Existing Information**

As part of the analysis to identify natural resources and critical areas in the study area, Anchor QEA ecologists reviewed the following sources of information to support field observations:

- Natural Resource Conservation Service (NRCS) Web Soil Survey (USDA 2014a) (Figure 3)
- Hydric Soil List for Washington State (USDA 2014b)
- U.S. Fish and Wildlife Service (USFWS) Wetlands Mapper for National Wetlands Inventory (NWI) Map Information (USFWS 2014) (Figure 4)
- Bellevue City Code (Bellevue 2014a)
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) Maps (WDFW 2014)
- Aerial photographs, Google Earth, June 2014



---

## 2 STUDY AREA DESCRIPTION

The Project area is located on the eastern shoreline of Meydenbauer Bay of Lake Washington, in Bellevue, King County, Washington (Township 25 North, Range 5 East, Section 31; Figure 1). The Project encompasses 6.7 acres of waterfront property along Meydenbauer Bay on Lake Washington (Figure 1b). It is located approximately 0.25 mile from Bellevue's downtown and Downtown Park. The Project area includes the existing Meydenbauer Beach Park, located at the Project's western boundary, and extends eastward to 99th Avenue NE and the Whaling Building on Pier 1. The Project site is bordered by Lake Washington Boulevard NE to the north and Lake Washington to the south. An aerial photograph of the Project area and existing conditions is shown on Figure 2.

### 2.1 Topography

The topography of the Project area (Figure 5) ranges from relatively level near the Lake Washington shoreline to very steep slopes as the Project area extends to the north. The level areas adjacent to Lake Washington are historic lakebed, prior to the construction of the Chittenden Locks. The site's grades have been historically disturbed with the development of several large homes that were demolished in 2014 or are slated for demolition. The change in elevation from the Lake shoreline to Lake Washington Boulevard NE ranges from about 75 feet at the west side of the road to 65 feet at the east side, where the road intersects with 99th Avenue NE. The change in elevation from Lake Washington Boulevard NE to the existing Beach Park entrance at 98th Avenue NE is about 67 feet.

### 2.2 Soils

The *NRCS Web Soil Survey* (USDA 2014a) identifies three soil series in the location of the Project area: Alderwood gravelly sandy loam, 15 to 30% slopes (AgD); and Arents, Alderwood material, 6 to 15% slopes (AmC). The Alderwood gravelly sandy loam soil is the primary constituent within the Project area. According to the *Hydric Soil List for King County, Washington*, the Alderwood gravelly sandy loam soil series is a moderately drained soil and not classified as a hydric soil. The Arents, Alderwood material soil series is also moderately drained and not classified as a hydric soil (USDA 2014b). Figure 3 shows the soil series in the study area.

In Section 3.2, Wetland Delineation Results, sample plot soil profiles are described for the three wetlands within the Project area. A summary of soils data collected at each sample plot is presented in Appendix A, Table A-3, and in the field data forms in Appendix B. Soils observed in the sample plots were generally consistent in texture with the identified soil series.

## **2.3 Hydrology**

The Project area is located in the Cedar-Sammamish Basin Water Resource Inventory Area 8 (Ecology 2014). Hydrologic characteristics in the Project area are influenced by regional groundwater, direct precipitation, surface water runoff, and Lake Washington. The elevation of Lake Washington is controlled by the U.S. Army Corps of Engineers (Corps) at the Hiram M. Chittenden Locks in Ballard. Typical water surface elevations are about 2 feet higher at the maximum in late spring or early summer than at their minimum in late fall or early winter. No streams were identified within the Project area. The Ordinary High Water Mark (OHWM) of the Lake shoreline was delineated as part of the investigation for the Critical Areas Report (Anchor 2015).

Sample plot hydrology is described for the four wetlands in Subsection 3.2, Wetland Delineation Results. A summary of hydrology data collected at each sampling plot is presented in Appendix A, Table A-4, and in the field data forms in Appendix B.

## **2.4 Plant Communities**

Vegetation within the Project area includes a variety of native, nonnative, and ornamental tree, shrub, grass, and herbaceous species associated with upland, wetland, and riparian habitat along Lake Washington. The *USFWS Wetlands Mapper for NWI Map Information* only identifies Lake Washington as a feature in the Project area and does not map any other wetland features (Figure 4). The Lake environment is mapped as lacustrine open water habitat unconsolidated bottom (L1UB) (USFWS 2014). WDFW PHS maps (WDFW 2014a) and City environmental maps (Bellevue 2014b) also identify the Lake habitat and do not identify any other wetland features within the Project area.

Wetland and upland vegetation for the wetland areas is described in Section 3.2, Wetland Delineation Results. A summary of vegetation data collected in the study area and at each

sampling plot is presented in Appendix A, Tables A-1 and A-2, and in the field data forms in Appendix B.

---

### 3 WETLAND DELINEATION

On June 10, 2014, Anchor QEA ecologists performed a wetland delineation and wetland rating analysis of wetland habitat in the study area. Three wetlands (Wetland A, B, and C) were identified within the study area during the investigation. Wetland habitats include Slope and Lake-fringe wetlands.

A complete description of Wetlands A, B, and C is provided in Section 3.2, Wetland Delineation Results, and shown on Figure 6. A summary of vegetation, soils, and hydrology data collected at each sampling plot is presented in Appendix A and in the field data forms in Appendix B.

#### 3.1 Wetland Delineation Methods

This subsection describes the methodology used to perform the wetland delineation, including the review of existing information and field investigation procedures. These methods are consistent with current federal and State agency requirements, as well as local jurisdiction requirements, for performing wetland delineations and identifying protective wetland buffer widths.

As specified by the Bellevue City Code (Bellevue 2014a) this wetland delineation was conducted according to the methods defined in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Corps 2010), and Ecology's *Washington State Wetland Identification and Delineation Manual* (Ecology 1997). Soil colors were classified by their numerical description, as identified on a Munsell Soil Color Chart (Munsell 1994).

The Corps (Environmental Laboratory 1987), the Washington State Shoreline Management Act (Ecology 2009), and the CAO of the City of Bellevue all define wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” The method for delineating wetlands is based on

the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. Hydrophytic vegetation is “the macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.” Hydric soils are “formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.” Wetland hydrology “encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season” (Ecology 1997). Data collection methods for each of these parameters are described in the following subsections.

A total of seven data plots were sampled and recorded, and each sample plot was identified numerically as either wetland or upland (for example, SP1Up, SP2Wet, SP3Wet, SP4Wet, etc.). Vegetation, soils, and hydrology information were collected at each of the plots and recorded on field data sheets. A summary of sample plot data is presented in Appendix A, and the field data forms are provided in Appendix B. Wetland boundaries were determined based upon plot data and visual observations of the wetland.

### **3.1.1     *Vegetation***

Plant species occurring in each plot were recorded on field data forms, with one data form per plot (Appendix B). Percent cover for each plant species was estimated in the plot, and dominant plant species were identified. At each plot, trees within a 30-foot radius, shrubs within a 15-foot radius, and emergents within a 3-foot radius from the center of the plot were identified and recorded. A plant indicator status, designated by USFWS (Reed 1988, 1993), was assigned to each species, and a determination was made as to whether the vegetation in the plot was hydrophytic. To meet the hydrophytic parameter, more than 50% of the dominant species, with 20% or greater cover, must have an indicator of obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC). Table 1 shows the wetland indicator status categories.

**Table 1**  
**Wetland Plant Indicator Definitions**

<b>Indicator Status</b>	<b>Description</b>
Obligate Wetland (OBL)	Plant species occur almost always in wetlands (estimated probability greater than 99%) under natural conditions.
Facultative Wetland (FACW)	Plant species usually occur in wetlands (estimated probability 67% to 99%) but are occasionally found in non-wetlands.
Facultative (FAC)	Plant species are equally likely to occur in wetlands or non-wetlands (estimated probability 34% to 66%).
Facultative Upland (FACU)	Plant species usually occur in non-wetlands (estimated probability 67% to 99%) but are occasionally found in wetlands.
Obligate Upland (UPL)	Plant species occur almost always in non-wetlands (estimated probability greater than 99%) under natural conditions.

### **3.1.2 Soils**

Soils were sampled in each plot and evaluated for hydric soil indicators. Soil pits were dug to a depth of 18 inches, unless prevented by impenetrable riprap. Hydric soil indicators include low soil matrix chroma, gleying, and redoximorphic (or “redox”) features. Redox features are spots of contrasting color that occur within the soil matrix (the predominant soil color). Gleyed soils are predominantly bluish, greenish, or grayish in color. Soils having a chroma of 2 or less are positive indicators of hydric soils (Environmental Laboratory 1987; Corps 2010).

### **3.1.3 Hydrology**

Wetland hydrology was evaluated at each plot to determine whether it “encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season” (Ecology 1997). Field observations of saturation, inundation, and other indicators of wetland hydrology, such as water-stained leaves and drainage patterns in wetlands, were recorded.

### **3.1.4 Other Data Sources**

Existing information was referenced to identify potential wetlands or site characteristics indicative of wetlands in the study area. The sources of reference information that supported field observations are identified in Section 1.1, Review of Existing Information.

### **3.1.5 Wetland Classifications**

Wetland community types are discussed according to the USFWS classification developed by Cowardin et al. (1979) for use in the NWI. This system, published in 1979 by a team of USFWS scientists led by L.M. Cowardin, bases the classification of wetlands on their physical characteristics, such as the general type of vegetation in the wetland (trees, shrubs, grass, etc.) and how much, and where, water is present in the wetland. The Cowardin system provides a classification for every known wetland type that occurs throughout the United States, and under this system, a wetland can be classified as having one or more wetland classification types. During the investigation, all three wetlands (Wetlands A, B, and C) were identified as palustrine systems. Palustrine wetlands are inland, non-tidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface). Palustrine wetlands range from permanently saturated or flooded land (e.g., marshes, swamps, and lake shores) to land that is wet only seasonally. Two of the three wetlands are associated with the Lake Washington shoreline. One wetland community type was identified during the wetland investigation:

- **Palustrine emergent (PEM):** These wetlands have erect, rooted, herbaceous vegetation present for most of the growing season in most years.

### **3.1.6 Wetland Ratings**

Wetland ratings were determined using the most current version of Ecology guidance in *Washington State Wetlands Rating System – Western Washington: Revised* (Hruby 2004) and *Washington State Wetland Rating Form – Western Washington, Version 2* (Ecology 2008).

The system developed by Ecology is used to differentiate wetlands based on their sensitivity to disturbance, their significance in the watershed, their rarity, our ability to replace them, and the beneficial functions they provide to society. The Ecology rating system requires the user to collect specific information about the wetland in a step-by-step process. Three major functions are analyzed: water quality improvement, hydrologic functions, and wildlife habitat. Ratings are based on a point system, where points are given if a wetland meets specific criteria related to the wetland's potential and the opportunity to provide certain benefits.

Per Ecology's rating system, wetlands are categorized according to the following criteria and to points given:

- **Category I wetlands** (70 to 100 points) represent a unique or rare wetland type, are more sensitive to disturbance, or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime.
- **Category II wetlands** (51 to 69 points) are difficult, though not impossible, to replace, and provide high levels of some functions.
- **Category III wetlands** (30 to 50 points) have moderate levels of functions. They have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.
- **Category IV wetlands** (0 to 29 points) have the lowest levels of functions and are often heavily disturbed.

The BCC classifies wetlands into four categories (Categories I, II, III, and IV) based on the adopted 2004 Washington State Wetland Rating System for Western Washington, Washington State Department of Ecology (BCC Land Use Code 20.25H.095).

In 2014, Ecology updated their Washington State Wetland Rating System. The effective date for the 2014 wetland rating system was January 1, 2015. Although the BCC specifies that wetlands be classified using the 2004 wetland rating system, wetlands in the Project area were also rated using the updated 2014 wetland rating system because Ecology authorization for State permits require the updated 2014 wetland rating system (Ecology 2015).

*Washington State Wetland Rating Forms* for both the 2004 (Ecology 2008) and 2014 (Hruby 2014) were recorded for each wetland. Wetland rating forms are presented in the Wetland Delineation Report, included in Appendix A.

### **3.1.7 Wetland Functions Assessment**

The functional values of wetlands were rated according to *Washington State Wetland Rating System – Western Washington: Revised* (Hruby 2004) and *Washington State Wetland Rating Form – Western Washington, Version 2* (Ecology 2008). Using Ecology's system, wetlands were rated based on a point system where points are awarded to three functional value



categories: water quality, hydrologic functions, and wildlife habitat. Detailed scoring, based on Ecology wetland rating forms, is provided in Appendix C.

### **3.1.8 State Hydrogeomorphic Classification System**

Scientists have come to understand that wetlands can perform functions in different ways. The way a wetland functions depends to a large degree on hydrologic and geomorphic conditions. To recognize these differences among wetlands, a way to group or classify them has been developed. This classification system, called the Hydrogeomorphic (HGM) Classification, groups wetlands into categories based on the geomorphic and hydrologic characteristics that control many functions. The *Washington State Wetland Rating Form – Western Washington, Version 2* (Ecology 2008) and the updated 2014 wetland rating system (Ecology 2015) incorporate the HGM Classification system as part of the questionnaire for characterizing a wetland's functions. The rating system uses only the highest grouping in the classification, i.e., wetland class. Wetland classes are based on geomorphic settings, such as Riverine, Slope, Lake-fringe, or Depressional. A classification key is provided within the rating form to help identify which of the following HGM Classifications apply to the wetland: Riverine, Depressional, Slope, Lake-fringe, Tidal Fringe, or Flats.

## **3.2 Wetland Delineation Results**

Three wetlands, Wetlands A, B, and C, were found in the study area. Wetland delineation results are shown in Figure 6. As described in the following subsections, two of the three wetlands (Wetlands B and C) are associated with the Lake Washington shoreline. A summary of vegetation, soils, and hydrology data collected at each sample plot is presented in Appendix A and in the field data forms in Appendix B.

### **3.2.1 Wetland A**

Wetland A is an approximately 0.026-acre (1,130-square-foot [sf]) horseshoe-shaped wetland with a PEM vegetation class and a Slope HGM class (Figure 6). Wetland A is located within one of the former residential parcels, about 50 feet from the Lake shoreline. The entire boundary of Wetland A was delineated within the Project area. Wetland vegetation is dominated by mowed grass and creeping buttercup (*Ranunculus repens*) with watercress (*Rorippa nasturtium*) and slough sedge (*Carex obnupta*) also occurring.

Dominant buffer vegetation in Wetland A includes mowed grass with common dandelion (*Taraxacum officinale*) and white clover (*Trifolium repens*). The wetland extends a few feet into a patch of the nonnative invasive species Himalayan blackberry (*Rubus armeniacus*) on the north, upslope end of the wetland. Himalayan blackberry extends into Wetland A but is generally rooted outside the wetland boundary.

Soils typically consisted of very dark gray silt loam to loamy sand with no redox features in the upper 7 to 8 inches, and very dark gray sandy loam with gravel and cobbles below about 8 inches. Soils in the upland plot were dark brown sandy loam with gravel with no redox features within 18 inches of the surface.

In the Wetland A sample plots, soil saturation was at the surface, with the water table typically ranging from at the surface to about 9 inches from the surface. In the upland plot, saturation was absent below 18 inches from the surface.

Data were collected at three sample plots: SP1Up, SP2Wet, and SP3Wet (Appendix A). The two wetland plots (SP2Wet and SP3Wet) contained indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. The upland plot (SP1Up) had indicators of hydrophytic vegetation and lacked indicators of wetland hydrology and hydric soils. Twelve flags were used to identify the boundary of Wetland A.

### **3.2.2 Wetland B**

Wetland B is an approximately 0.002-acre (85-sf) wetland with a PEM vegetation class and a Lake-fringe HGM class (Figure 6). Wetland B is located along the Lake Washington shoreline within and inland of a riprap bulkhead. It appears that soil has accumulated on top of and within the crevices of the riprap above the OHWM, allowing vegetation to establish. The entire boundary of Wetland B was delineated within the Project area. Wetland vegetation is dominated by mowed grass, soft rush (*Juncus effusus*), reed canarygrass (*Phalaris arundinacea*), and field horsetail (*Equisetum arvense*), with English ivy (*Hedera helix*) and orchard morning glory (*Convolvulus arvensis*) extending into the wetland area.

Dominant buffer vegetation in Wetland B includes mowed grass, field horsetail, birds-foot trefoil (*Lotus corniculatus*), English ivy, and white clover.

Soils typically consisted of very dark gray silt loam in about the upper 5 inches, with very dark gray sandy loam with gravel below about 5 inches of the surface and no redox features. Soils in the upland plot were dark brown sandy loam with no redox features within about the upper 6 inches of the surface, and brown sandy loam with gravel and cobbles and slight brown redox features below about 6 inches of the surface.

In the Wetland B sample plots, soil saturation was at the surface, with the water table typically ranging from at the surface to about 4 to 6 inches from the surface. The wetlands location on the riprap indicates that the Lake water contributes hydrology for the wetland. In the upland plot, saturation was absent below 18 inches from the surface.

Data were collected at two sample plots: SP4Up and SP5Wet (Appendix A). The wetland plot (SP5Wet) contained indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. The upland plot (SP4Up) contained indicators of hydrophytic vegetation and lacked indicators of wetland hydrology and hydric soils. Four flags were used to identify the boundary of Wetland B.

### **3.2.3 Wetland C**

Wetland C is an approximately 0.01-acre (450-sf) wetland with a PEM vegetation class and a lake-fringe HGM class (Figure 6). In this area of the Park there is a riprap bulkhead that runs in front of a vertical-wall concrete bulkhead. Wetland C encompasses a narrow band of vegetation growing between the two bulkheads. Similar to Wetland B, it appears that soil has accumulated on top of and within the crevices of the riprap, allowing vegetation to establish. Only about 6 inches of soil was penetrated before hitting the riprap material. The entire boundary of Wetland C was delineated within the Project area. Wetland vegetation is dominated by soft rush, creeping buttercup, common velvetgrass (*Holcus lanatus*), and the nonnative species reed canarygrass and yellow-flag iris (*Iris pseudacorus*), with orchard morning glory extending into the wetland area.

Dominant buffer vegetation in Wetland C includes mowed grass and the shrub landscape vegetation *Berberis* (*Berberis* sp.).

Soils were only penetrable to about 6 inches before hitting riprap material. Soils typically consisted of very dark gray sandy loam with gravel and no redox features. Soils in the upland plot were brown imported topsoil material associated with landscaped areas of the Park.

In the Wetland C sample plots, soil saturation was at the surface, with the water table assumed at about 11 inches based on the Lake water level elevation. The wetlands location on the riprap indicates that the Lake water contributes hydrology for the wetland. In the upland plot, saturation was absent below 18 inches from the surface.

Data were collected at two sample plots: SP6Up and SP7Wet (Appendix A). The wetland plot (SP7Wet) contained indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. The upland plot (SP6Up) lacked indicators of hydrophytic vegetation, wetland hydrology and hydric soils. Nine flags were used to identify the boundary of Wetland C.

### **3.3 Regulatory Framework**

Guidance from USFWS, Ecology, and the City of Bellevue was used to determine the wetland classifications. Information and excerpts from the specific guidance language are provided in the following subsections.

#### **3.3.1 USFWS Classification**

The wetlands identified in the study area have been classified using the system developed by Cowardin et al. (1979) for use in the NWI. Table 2 lists the USFWS classifications for the three wetlands and their connection to surface waters.

**Table 2**  
**U.S. Fish and Wildlife Service Wetland Classifications**

Wetland	USFWS Classification	Surface Water Connection
Wetland A	PEM	None
Wetland B	PEM	Lake Washington
Wetland C	PEM	Lake Washington

**Notes:**

PEM = Palustrine emergent

USFWS = U.S. Fish and Wildlife Service

### **3.3.2 Ecology Rating, Classification, and Functions and Values Scores**

Per the City of Bellevue CAO (Bellevue 2014a), wetland ratings are determined using Ecology's *Washington State Wetlands Rating System – Western Washington: Revised* (Hruby 2004) and *Washington State Wetland Rating Form – Western Washington, Version 2* (Ecology 2008). Under both the 2004 (Hruby 2004) and the updated 2014 Ecology (Hruby 2014) wetland rating systems, Wetland A is rated a Category IV wetland. Wetlands B and C have different ratings per Ecology's 2004 and 2014 wetland ratings systems. Wetlands B and C are both rated as Category IV wetlands under the 2004 wetland rating system and Category III wetlands under the 2014 wetland rating system. Table 3 lists the 2004 Ecology, 2014 Ecology, and local (City of Bellevue) wetland rating and classification. As described in Subsection 3.1.6, Wetland Ratings, the BCC specifies that wetlands be classified using the 2004 wetland rating system (Bellevue 2014a).

**Table 3**  
**Summary of Wetland Classes and Ratings Using Ecology**  
**2004 and 2014 Wetlands Rating Systems**

Wetland	Area (acres)	Hydrogeomorphic Classification	2004 <sup>1</sup> State Rating (Ecology)	2014 <sup>2</sup> State Rating (Ecology)	Local Rating (City of Bellevue) <sup>3</sup>
Wetland A	0.026	Slope	IV	IV	IV
Wetland B	0.002	Slope and Lake-fringe	IV	III	IV
Wetland C	0.01	Slope and Lake-fringe	IV	III	IV

**Notes:**

1. Hrubby, T., 2004. *Washington State Wetlands Rating System – Western Washington: Revised*. Publication #04-06-25. Olympia, Washington.  
Ecology, 2008. *Washington State Wetland Rating Form – Western Washington, Version 2*. Olympia, Washington.
2. Hrubby, T., 2014. *Washington State Wetlands Rating System for Western Washington: 2014 Update*. Publication No. 14-06-029. Olympia, WA: Washington State Department of Ecology.
3. City of Bellevue 2014a. *Bellevue City Code*. Cited: June 1, 2014. Available from: <http://www.codepublishing.com/wa/bellevue/>

For both the 2004 (Hrubby 2004) and the updated 2014 (Hrubby 2014) Ecology wetland rating systems, the functions of the wetland rating categories are rated as Low, Moderate, or High. There is variation between the 2004 and 2014 rating systems. For the 2004 rating system, four functions for rating are identified: water quality, hydrologic, wildlife habitat potential, and wildlife habitat opportunity. The Low, Moderate, or High rating for these four functions is based on the rating score of each function. For the updated 2014 rating system, there are three functions: Improving Water Quality, Hydrologic, and Habitat. Then, within each of these three functions there are three sub-function categories: Site Potential, Landscape Potential, and Value. Each of these sub-function categories is rated as Low, Moderate, or High. Wetland function 2004 rating categories are summarized in Table 4. Wetland functional values and scores for Wetlands A, B, and C under the 2004 Ecology rating system are shown in Table 5. Wetland functional values and scores for Wetlands A, B, and C under the 2014 Ecology rating system are shown in Table 6. Both the 2004 and 2014 Ecology wetland rating forms are provided in Appendix C.

**Table 4**  
**Summary of 2004 Wetland Function Rating Score Categories<sup>1</sup>**

<b>Qualitative Rating of Function</b>	<b>Improving Water Quality Potential (Point Range)</b>	<b>Hydrologic Functions (Point Range)</b>	<b>Habitat Functions Potential (Point Range)</b>	<b>Habitat Functions Opportunity (Point Range)</b>
High	12 to 16	12 to 16	15 to 18	15 to 18
Moderate	6 to 11	6 to 11	7 to 14	6 to 13
Low	0 to 5	0 to 5	0 to 6	0 to 5

**Note:**

1. Ecology, 2008. Washington State Wetland Rating Form – Western Washington, Version 2. Olympia, Washington.

**Table 5**  
**Summary of Functions and Values 2004 Wetland Rating Scores**

<b>Wetland</b>	<b>Water Quality Functions Potential Score</b>	<b>Water Quality Opportunity (Yes/No)</b>	<b>Hydrologic Functions Potential Score</b>	<b>Hydrologic Functions Opportunity (Yes/No)</b>	<b>Habitat Functions Potential Score</b>	<b>Habitat Functions Opportunity Score</b>	<b>Total Functions Score<sup>1</sup></b>
<b>Total Maximum Score</b>	<b>16</b>	No = 1 Yes = 2	<b>16</b>	No = 1 Yes = 2	<b>18</b>	<b>18</b>	<b>100</b>
Wetland A	1	2	2	1	3	7	14
Wetland B	4	2	0	1	4	8	20
Wetland C	4	2	0	2	4	8	20

**Note:**

1. Calculated as (Water Quality Functions Potential Score times Water Quality Opportunity Score) plus (Hydrologic Functions Potential Score times Hydrologic Functions Opportunity Score) plus (Habitat Functions Potential Score) plus (Habitat Functions Opportunity Score)

**Table 6**  
**Summary of Functions and Values 2014 Wetland Rating Scores**

<b>Wetland and Function</b>	<b>Improving Water Quality</b>	<b>Hydrologic</b>	<b>Habitat</b>	<b>Total Functions Score<sup>1</sup></b>
<b>Wetland A</b>				
Site Potential	Low	Low	Low	
Landscape Potential	Low	Low	Moderate	
Value	High	Low	Moderate	
Score Based on Rating <sup>1</sup>	5	3	5	13
<b>Wetland B</b>				
Site Potential	Moderate	Low	Low	
Landscape Potential	Moderate	Moderate	Moderate	
Value	High	High	Moderate	
Score Based on Rating <sup>1</sup>	7	6	5	18
<b>Wetland C</b>				
Site Potential	Moderate	Low	Low	
Landscape Potential	Moderate	Moderate	Moderate	
Value	High	High	Moderate	
Score Based on Rating <sup>1</sup>	7	6	5	18

**Note:**

1. Potential total score per function is 9, for a potential total score of 27.

### **3.4 Wetland Functional Assessment**

The following subsections provide a description of the functions of Wetlands A, B, and C based on the 2004 Ecology wetland rating system.

#### **3.4.1 Water Quality Functions**

All three of the wetlands in the Project area provide opportunities to improve water quality, primarily because their location in an urban environment allows for the possibility of water quality improvement. Wetland A provides opportunities to improve water quality due to its proximity to developed residential areas. Wetlands B and C provide opportunities to improve water quality due to their proximity to developed residential areas and to a park with maintained grassy areas. In addition, because Wetlands B and C are also along Lake



Washington, which hosts power boats with gasoline and diesel engines, the wetlands provide an opportunity to improve water quality.

Wetlands A, B, and C have low function scores for the potential to improve water quality functions due to their small size, limit of emergent vegetation, and mowed grass habitat. Wetland characteristics that provide the potential to improve water quality include the relative area of depressions within the wetland that influences its ability to trap sediments during a flooding event. The characteristic of vegetation within the wetlands to restrict flow and trap sediments and pollutants also contributes to a low function score. All three wetlands do not score well on these characteristics.

### **3.4.2     *Hydrologic Functions***

Wetlands A and B provide little opportunity to reduce flooding and erosion because they do not outlet to an area prone to flooding. Wetland C scored slightly higher, as it is adjacent to an existing park where there are human activities that could be damaged by flooding.

Wetlands A, B, and C have low function scores for the potential to reduce flooding and erosion. Wetland A includes mowed grass vegetation, which does not reduce surface flow velocity. Wetlands B and C both score poorly due to their limited vegetation area (and width).

### **3.4.3     *Habitat Functions***

Potential to provide habitat is a measure of whether a wetland has the necessary structure to provide habitat to species. Wetlands A, B, and C have low function scores for the potential to provide habitat due to the absence of diverse vegetative structure (one Cowardin [1979] vegetation class), few water regimes or hydroperiods, limited plant richness (between 5 and 19 native species observed), limited habitat diversity, and few special-habitat features.

Opportunity to provide habitat is a measure of whether the wetland is in a position in the landscape to provide habitat. Wetlands A, B, and C have moderate scores for habitat opportunity due to the characteristics of the wetland buffers (developed versus undisturbed conditions), the quality of habitat conditions near or adjacent to the wetlands, and proximity to other wetlands. While all three wetlands are within developed areas, they are also

immediately adjacent or very close to the Lake Washington shoreline, which provides a relatively undisturbed open-water buffer.

Habitat functions of wetlands are further defined by their Cowardin Classification. Wetlands A, B, and C are predominately PEM systems and are very small wetlands. Wetlands with mixed classifications are generally of higher value than wetlands with a single classification. Forested wetlands are generally considered to be of higher value than emergent or scrub-shrub wetlands because of the functional values they provide. The structure and size of wetlands A, B, and C reduce their overall functional value.

### **3.5 City of Bellevue Wetland Buffer Guidance**

Appropriate minimum wetland buffers have been identified according to the current BCC (Bellevue 2014a). The BCC identifies minimum protective buffer widths based on the wetland category and the Ecology water quality and habitat rating score, per the 2004 Ecology rating system. The City does not assign buffer width for Category IV wetlands that are less than 0.06 acre (2,500 sf). Accordingly, under the 2004 Ecology rating system, Wetlands A, B, and C do not require buffers because they are less than 0.06 acre in size. Although the BCC specifies wetland ratings under the 2004 Ecology rating system, buffer widths for Category III wetlands, per the 2014 Ecology rating system have also been identified. The City will determine the final wetland ratings and minimum buffers. Table 8 summarizes City ratings and buffer widths based on the 2004 Ecology rating system. Table 9 summarizes City ratings and buffer widths based on the 2014 Ecology rating system.

**Table 8**  
**City of Bellevue City Code Wetland Rating and Standard**  
**Buffer Width, Based on the 2004 Ecology Rating System**

<b>Study Area Wetlands</b>	<b>2004 State Rating (Ecology)</b>	<b>Local Rating (City of Bellevue)</b>	<b>Ecology Habitat Rating Score</b>	<b>City of Bellevue City Code Buffer Width (feet)</b>
Wetland A	IV	IV	10	n/a <sup>1</sup>
Wetland B	IV	IV	12	n/a <sup>1</sup>
Wetland C	IV	IV	12	n/a <sup>1</sup>

**Notes:**

Source: City of Bellevue, 2014. Bellevue City Code. Cited: June 1, 2014. Available from: <http://www.codepublishing.com/wa/bellevue/>

1. Category IV Wetlands smaller than 2,500 sf (0.06 acre) have no buffer requirement.

**Table 9**  
**City of Bellevue City Code Wetland Rating and Standard**  
**Buffer Width, Based on the 2014 Ecology Rating System**

<b>Study Area Wetlands</b>	<b>2014 State Rating (Ecology)</b>	<b>Local Rating (City of Bellevue)</b>	<b>Ecology Habitat Rating Score</b>	<b>City of Bellevue City Code Buffer Width (feet)</b>
Wetland A	IV	IV	n/a <sup>1</sup>	n/a <sup>2</sup>
Wetland B	III	III	n/a <sup>1</sup>	60
Wetland C	III	III	n/a <sup>1</sup>	60

**Notes:**

Source: City of Bellevue 2014. Bellevue City Code. Cited: June 1, 2014. Available from: <http://www.codepublishing.com/wa/bellevue/>

1. Habitat rating score under the 2014 rating system cannot be applied to the 2004 rating system.
2. Category IV Wetlands smaller than 2,500 sf (0.06 acre) have no buffer requirement.

### 3.6 Wetland Delineation and Typing Limitations

Wetland identification is an inexact science, and differences of professional opinion often occur between trained individuals. Final determinations for wetland boundaries and typing concurrence or adjustments to these are the responsibility of the regulating resource agency. Wetlands are, by definition, transitional areas; their boundaries can be altered by changes in hydrology or land use. In addition, the definition of jurisdictional wetlands may change. If a physical change occurs in the basin, or if 3 years pass before the proposed project is undertaken, another wetland survey should be conducted. The results and conclusions

expressed herein represent Anchor QEA's professional judgment based on the information available. No other warranty, expressed or implied, is made.

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# FIGURES

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<b>Figure 1a</b>	<b>Vicinity Map</b>
<b>Figure 1b</b>	<b>Project Site Aerial View</b>
<b>Figure 2</b>	<b>Existing Conditions</b>
<b>Figure 3</b>	<b>NRCS Web Soil Survey</b>
<b>Figure 4</b>	<b>USFWS National Wetland Inventory</b>
<b>Figure 5</b>	<b>Project Survey and Topography</b>
<b>Figure 6</b>	<b>Wetland Delineation Results</b>





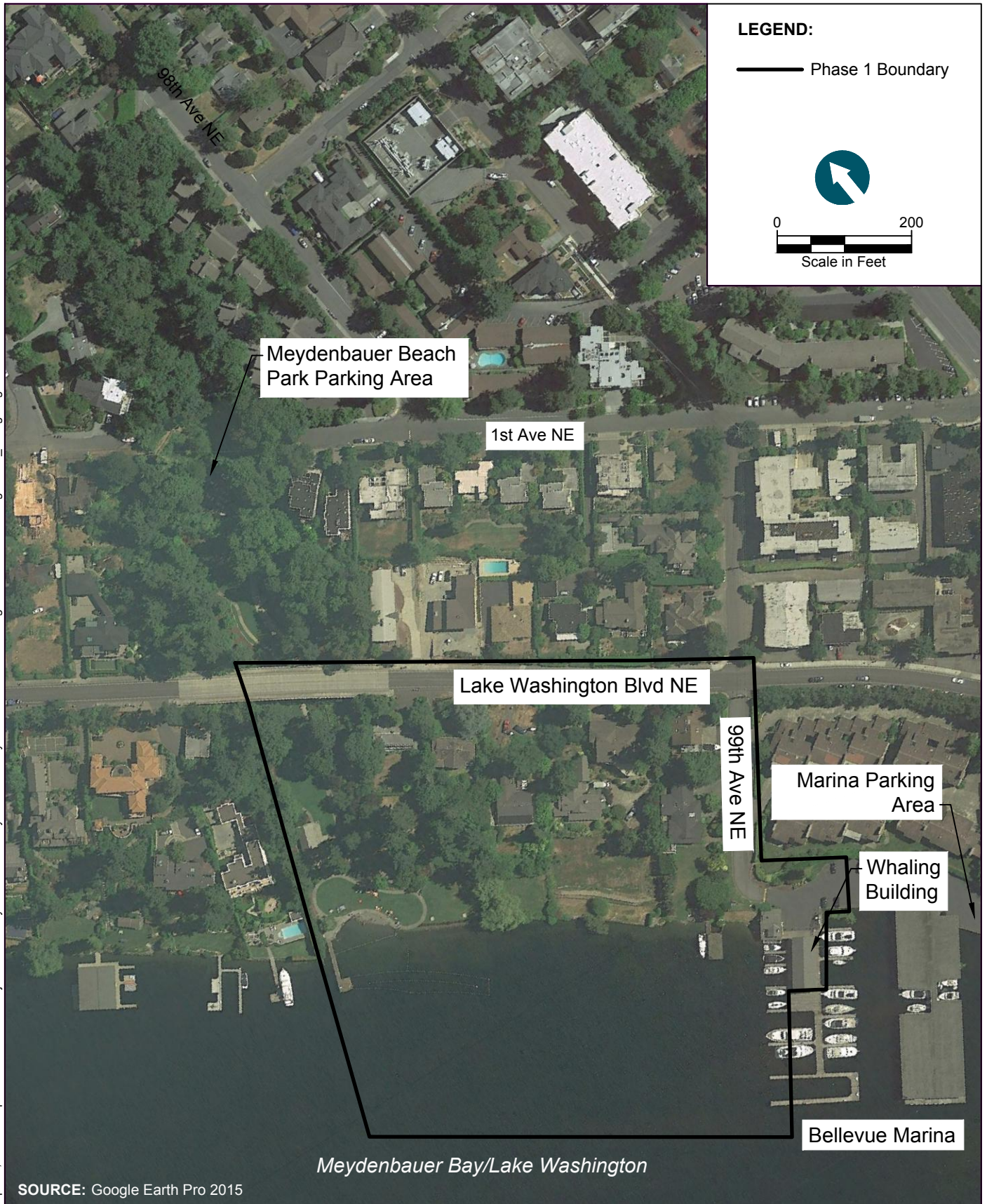
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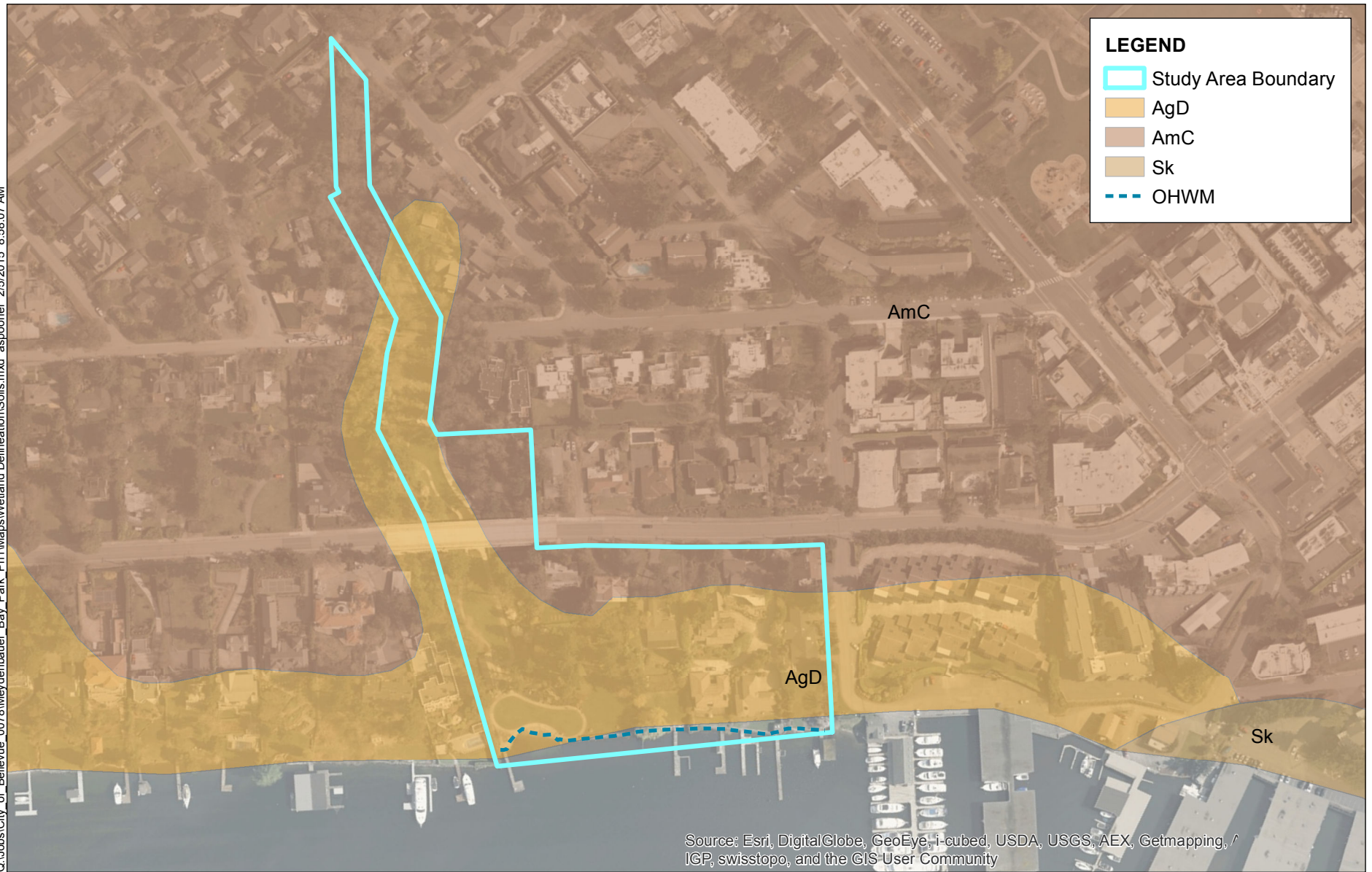








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# APPENDIX A

## SAMPLE PLOT SUMMARY DATA

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**Table A-1**  
**Plant Species Observed During the Investigation**

Scientific Name	Common Name	Indicator
<b>Trees</b>		
<i>Abies sp</i>	Fir	FACU-
<i>Acer japonicum sp</i>	Japanese maple	
<i>Acer macrophyllum</i>	Big leaf maple	FACU
<i>Alnus rubra</i>	Red alder	FAC
<i>Cedrus libani</i>	Cedar of Lebanon	
<i>Cercidiphyllum japonicum</i>	Katsura	
<i>Chamaecyparis lawsoniana</i>	Lawson cypress/Port Orford Cedar	FACU
<i>Cornus florida</i>	Flowering dogwood	FACU
<i>Cornus nuttallii</i>	Pacific dogwood	FACU
<i>Crataegus douglasii</i>	Douglas hawthorne	FAC
<i>Liquidambar sp</i>	Sweet gum	
<i>Picea sp</i>	Ornamental spruce	FAC
<i>Pinus strobus</i>	Eastern white pine	FACU
<i>Prunus sp</i>	Cherry	FACU
<i>Pseudotsuga menziesii</i>	Douglas fir	FACU
<i>Quercus palustris</i>	Pin oak	FACW
<i>Salix babylonica</i>	Weeping willow	FACW
<i>Thuja plicata</i>	Western red cedar	FAC
<i>Tsuga heterophylla</i>	Western hemlock	FACU-
<b>Shrubs</b>		
<i>Acer circinatum</i>	Vine maple	FAC-
<i>Azalea sp</i>	Azalea	
<i>Berberis sp</i>	Berberis	UPL
<i>Cornus sericea</i>	Red osier dogwood	FACW
<i>Corylus cornuta</i>	Beaked hazelnut	FACU
<i>Convolvulus arvensis</i>	Field bindweed	UPL
<i>Ficus carica</i>	Fig	FACU
<i>Gaultheria shallon</i>	Salal	FACU
<i>Helix hedera</i>	English ivy	FACU
<i>Hydrangea sp</i>	Hydrangea	FACU
<i>Ilex aquifolium</i>	Holly	FACU
<i>Mahonia aquifolium</i>	Tall Oregon grape	UPL
<i>Mahonia nervosa</i>	Low Oregon grape	FACU
<i>Prunus laurocerasus</i>	English laurel	
<i>Rhododendron macrophyllum</i>	Pacific rhododendron	UPL
<i>Rhododendron sp</i>	Rhododendron	UPL
<i>Ribes sanguineum</i>	Red flowering currant	FACU

Scientific Name	Common Name	Indicator
<i>Rosa sp</i>	Native rose	FAC
<i>Rubus spectabilis</i>	Salmonberry	FAC+
<i>Sambucus racemosa</i>	Red elderberry	FACU
<i>Symphoricarpos albus</i>	Snowberry	FACU
<i>Vaccinium ovatum</i>	Evergreen huckleberry	UPL
<i>Viburnum sp</i>	Viburnum	FACU
<b>Grass, Ferns, and Herbaceous</b>		
<i>Agrostis capillaris</i>	Colonial bentgrass	FAC
<i>Carex obnupta</i>	Slough sedge	OBL
<i>Equisetum arvense</i>	Field Horsetail	FAC
<i>Festuca rubra</i>	Red fescue	FAC+
<i>Holcus lanatus</i>	Common velvet grass	FAC
<i>Iris pseudacorus</i>	Iris	OBL
<i>Juncus effusus</i>	Soft rush	FACW
<i>Lotus corniculatus</i>	Birds-foot trefoil	FAC
<i>Phalaris arundinacea</i>	Reed canarygrass	FACW
<i>Plantago lanceolata</i>	English plantain	FAC
<i>Poa pratensis</i>	Kentucky bluegrass	FAC
<i>Poliga sp</i>	Poliga	FAC
<i>Polystichum munitum</i>	Sword fern	FACU
<i>Ranunculus repens</i>	Creeping buttercup	FACW
<i>Rorippa nasturtium</i>	Watercress	FACW
<i>Rumex occidentalis</i>	Curled dock	FACW
<i>Taraxacum officinale</i>	Common dandelion	FACU
<i>Trifolium pratense</i>	Red clover	FACU
<i>Trifolium repens</i>	White clover	FAC

**Note:**

1. These categories, referred to as the “wetland indicator status,” (from the wettest to driest habitats) are as follows: obligate wetland (OBL) plants, facultative wetland (FACW) plants, facultative (FAC) plants, facultative upland (FACU) plants, and obligate upland (UPL) plants.

# APPENDIX B

## FIELD DATA FORMS

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Meydenbauer Bay Park Phase I City/County: Bellevue/King Sampling Date: June 10, 2014  
 Applicant/Owner: City of Bellevue State: WA Sampling Point: Wetland A SP1 Up  
 Investigator(s): C. Douglas & A. Spooner Section, Township, Range: S31, T25N, R5E  
 Landform (hillslope, terrace, etc.): Hillslope & shoreline Local relief (concave, convex, none): none Slope (%): 1 to 5%  
 Subregion (LRR): A Lat: 47 36 39.60 Long: 122 12 40.22 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: Wetland A is horseshoe shaped and located on a slope that is dominated by mowed grass, about 50 feet from lake shoreline. Slope % increases inland of the wetland.		

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	2 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	2 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 foot radius)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = _____, 20% = _____	0	= Total Cover		UPL species _____	x5 = _____
Herb Stratum (Plot size: 3 foot radius)				Column Totals:	_____ (A) _____ (B)
1. <u>Taraxacum officinale</u>	15	no	FACU	Prevalence Index = B/A = _____	
2. <u>Trifolium repens</u>	25	yes	FAC		
3. <u>mowed grass</u>	60	yes	FAC		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = 1, 20% = 1	100	= Total Cover			
Woody Vine Stratum (Plot size: 3 foot radius)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
2. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%	
50% = _____, 20% = _____	_____	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
% Bare Ground in Herb Stratum 0				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: 100% wetland vegetation per the dominance test, however, few species and dominant vegetation is mowed grass.

**SOIL**Sampling Point: Wetland A SP1 Up**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
<u>0 to 18</u>	<u>7.5YR 3/2</u>	<u>100</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>sandy loam</u>	<u>sandy loam with gravel</u>
_____	_____	_____	_____	_____	_____	_____	_____	<u>at 10" more compacted; more gravel</u>
_____	_____	_____	_____	_____	_____	_____	_____	<u>content, some cobble</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                                |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                            |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**Yes ☐ No ☒

Remarks: 2 chroma with no redox features

**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                      |
| <input type="checkbox"/> High Water Table (A2)                     | <b>(except MLRA 1, 2, 4A, and 4B)</b>                                   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Salt Crust (B11)                               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Aquatic Invertebrates (B13)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                     |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)                  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b> |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                     |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (2 or more required)

- |  |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |
| <b>(MLRA 1, 2, 4A, and 4B)</b>                                     |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>     |
| <input type="checkbox"/> Frost-Heave Hummocks (D7)                 |

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): \_\_\_\_\_**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: no hydrology present

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Meydenbauer Bay Park Phase I City/County: Bellevue/King Sampling Date: June 10, 2014  
 Applicant/Owner: City of Bellevue State: WA Sampling Point: Wetland A SP2 Wet  
 Investigator(s): C. Douglas & A. Spooner Section, Township, Range: S31, T25N, R5E  
 Landform (hillslope, terrace, etc.): Hillslope & shoreline Local relief (concave, convex, none): concave Slope (%): 1 to 5%  
 Subregion (LRR): A Lat: 47 36 39.60 Long: 122 12 40.22 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: <b>Wetland A is horseshoe shaped and located on a slope that is dominated by mowed grass, about 50 feet from lake shoreline. Slope % increases inland of the wetland.</b>			

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																								
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
50% = _____, 20% = _____	<u>0</u>	= Total Cover																										
Sapling/Shrub Stratum (Plot size: 15 foot radius)				<b>Prevalence Index worksheet:</b>  <table border="0"> <tr> <td colspan="2"><u>Total % Cover of:</u></td> <td><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td>_____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species</td> <td>_____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species</td> <td>_____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td>_____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td>_____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = _____</td> </tr> </table>	<u>Total % Cover of:</u>		<u>Multiply by:</u>	OBL species	_____	x1 = _____	FACW species	_____	x2 = _____	FAC species	_____	x3 = _____	FACU species	_____	x4 = _____	UPL species	_____	x5 = _____	Column Totals:	_____ (A)	_____ (B)	Prevalence Index = B/A = _____		
<u>Total % Cover of:</u>		<u>Multiply by:</u>																										
OBL species	_____	x1 = _____																										
FACW species	_____	x2 = _____																										
FAC species	_____	x3 = _____																										
FACU species	_____	x4 = _____																										
UPL species	_____	x5 = _____																										
Column Totals:	_____ (A)	_____ (B)																										
Prevalence Index = B/A = _____																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
50% = _____, 20% = _____	<u>0</u>	= Total Cover																										
Herb Stratum (Plot size: 3 foot radius)				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
1. <u>Rumex occidentalis</u>	<u>10</u>	<u>no</u>	<u>FACW</u>																									
2. <u>Ranunculus repens</u>	<u>50</u>	<u>yes</u>	<u>FACW</u>																									
3. <u>Rorripa nasturtium</u>	<u>15</u>	<u>no</u>	<u>FACW</u>																									
4. <u>Mowed grass</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
11. _____	_____	_____	_____																									
50% = <u>1</u> , 20% = <u>1</u>	<u>100</u>	= Total Cover																										
Woody Vine Stratum (Plot size: 3 foot radius)																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
50% = _____, 20% = _____	_____	= Total Cover																										
% Bare Ground in Herb Stratum <u>0</u>																												

Remarks: Dominant vegetation 100% per the dominance test.

**SOIL**Sampling Point: Wetland A SP2 Wet**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 to 2	10YR 3/1	100	None	None	None	None	silt loam	
2 to 6	7.5YR 3/1	100	None	None	None	None	sandy loam	with gravel
6 to 7								organic decomposing matter
7 to 18	7.5YR 3/1	100	None	None	None	None	loamy sand	gravel and cobble

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                       | <input type="checkbox"/> Sandy Redox (S5)                                |
| <input type="checkbox"/> Histic Epipedon (A2)                | <input type="checkbox"/> Stripped Matrix (S6)                            |
| <input type="checkbox"/> Black Histic (A3)                   | <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> |
| <input type="checkbox"/> Hydrogen Sulfide (A4)               | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)   | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input checked="" type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)            | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)            | <input type="checkbox"/> Redox Depressions (F8)                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**Yes ☒ No ☐

Remarks: 1 chroma with no redox features

**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                      |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <b>(except MLRA 1, 2, 4A, and 4B)</b>                                   |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Salt Crust (B11)                               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Aquatic Invertebrates (B13)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                     |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)                  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b> |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                     |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (2 or more required)

- |  |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |
| <b>(MLRA 1, 2, 4A, and 4B)</b>                                     |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>     |
| <input type="checkbox"/> Frost-Heave Hummocks (D7)                 |

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☒ No ☐ Depth (inches): 9Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface is saturated with water table at 9 inches.



# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Meydenbauer Bay Park Phase I City/County: Bellevue/King Sampling Date: June 10, 2014  
 Applicant/Owner: City of Bellevue State: WA Sampling Point: Wetland A SP3  
 Investigator(s): C. Douglas & A. Spooner Section, Township, Range: S31, T25N, R5E  
 Landform (hillslope, terrace, etc.): Hillslope and shoreline Local relief (concave, convex, none): concave Slope (%): 1 to 5%  
 Subregion (LRR): A Lat: 47 36 39.60 Long: 122 12 40.22 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: <b>Wetland A is horseshoe shaped and located on a slope that is dominated by mowed grass, about 50 feet from lake shoreline. Slope % increases inland of the wetland.</b>			

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 foot radius)				Prevalence Index worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: 3 foot radius)				Column Totals: _____ (A) _____ (B)
1. <u>Rumex occidentalis</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	Prevalence Index = B/A = _____
2. <u>Ranunculus repens</u>	<u>50</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Rorripa nasturtium</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	
4. <u>Mowed grass</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
5. <u>Holcus lanatus</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
6. <u>Carex obnupta</u>	<u>5</u>	<u>no</u>	<u>OBL</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>1</u> , 20% = <u>2</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: 3 foot radius)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: 100% wetland vegetation per the dominance test, all species FAC or better.				

**SOIL**Sampling Point: Wetland A SP3 Wet**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 to 1	10YR 3/1	100	None	None	None	None	silt loam	
1 to 7	7.5YR 3/1	100	None	None	None	None	loamy sand	loamy sand with gravel
7 to 18	7.5YR 3/1	100	None	None	None	None	sandy loam	compacted, very gravelly with cobble
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                       | <input type="checkbox"/> Sandy Redox (S5)                                |
| <input type="checkbox"/> Histic Epipedon (A2)                | <input type="checkbox"/> Stripped Matrix (S6)                            |
| <input type="checkbox"/> Black Histic (A3)                   | <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> |
| <input type="checkbox"/> Hydrogen Sulfide (A4)               | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)   | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input checked="" type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)            | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)            | <input type="checkbox"/> Redox Depressions (F8)                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**Yes ☒ No ☐

Remarks: 1 chroma with no redox features

**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Water-Stained Leaves (B9)                      |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <b>(except MLRA 1, 2, 4A, and 4B)</b>                                   |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Salt Crust (B11)                               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Aquatic Invertebrates (B13)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                     |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)                  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b> |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                     |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (2 or more required)

- |  |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |
| <b>(MLRA 1, 2, 4A, and 4B)</b>                                     |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>     |
| <input type="checkbox"/> Frost-Heave Hummocks (D7)                 |

**Field Observations:**Surface Water Present? Yes ☒ No ☐ Depth (inches): at surfaceWater Table Present? Yes ☒ No ☐ Depth (inches): at surfaceSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): at surface**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Standing water at surface.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Meydenbauer Bay Park Phase I City/County: Bellevue/King Sampling Date: June 10, 2014  
 Applicant/Owner: City of Bellevue State: WA Sampling Point: Wetland B SP4 Up  
 Investigator(s): C. Douglas & A. Spooner Section, Township, Range: S31, T25N, R5E  
 Landform (hillslope, terrace, etc.): Hillslope and shoreline Local relief (concave, convex, none): none Slope (%): 1 to 4%  
 Subregion (LRR): A Lat: 47 36 39.60 Long: 122 12 40.22 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: <b>Wetland B is located along the lake shoreline inland of a riprap bulkhead. Vegetation appears to be growing within soil material accumulated on top of riprap material. Mowed lawn is located inland of the wetland.</b>			

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 foot radius)				Prevalence Index worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: 3 foot radius)				Column Totals: _____ (A) _____ (B)
1. <u>mowed grass</u>	<u>70</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>Rumex occidentalis</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
3. <u>Holcus lanatus</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
4. <u>Lotus corniculatus</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
5. <u>Trifolium repens</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
6. <u>Equisetum arvense</u>	<u>15</u>	<u>no</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>1</u> , 20% = <u>0</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: 3 foot radius)				Hydrophytic Vegetation Indicators:
1. <u>Convolvulus arvensis</u>	<u>10</u>	<u>yes</u>	<u>UPL</u>	
2. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%
50% = <u>1</u> , 20% = <u>0</u>	<u>10</u>	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>
% Bare Ground in Herb Stratum <u>0</u>				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
Remarks: Dominant vegetation is mowed grass upslope and inland of wetland				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

**SOIL**Sampling Point: Wetland B SP4 Up**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 to 6	10YR 3/3	100	None	None	None	None	sandy loam	_____
6 to 18+	7.5YR 4/2	100	7.5YR 4/4	1	D	M	sandy loam	sandy loam with gravel and cobbles marginal redox features
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                                |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                            |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**Yes ☐ No ☒

Remarks: 3 chroma and 4 chroma with marginal redox features below 6 inches

**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                      |
| <input type="checkbox"/> High Water Table (A2)                     | <b>(except MLRA 1, 2, 4A, and 4B)</b>                                   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Salt Crust (B11)                               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Aquatic Invertebrates (B13)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                     |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)                  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b> |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                     |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (2 or more required)

- |  |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |
| <b>(MLRA 1, 2, 4A, and 4B)</b>                                     |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>     |
| <input type="checkbox"/> Frost-Heave Hummocks (D7)                 |

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): \_\_\_\_\_**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: no hydrology present

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Meydenbauer Bay Park Phase I City/County: Bellevue/King Sampling Date: June 10, 2014  
 Applicant/Owner: City of Bellevue State: WA Sampling Point: Wetland B SP5 Wet  
 Investigator(s): C. Douglas & A. Spooner Section, Township, Range: S31, T25N, R5E  
 Landform (hillslope, terrace, etc.): Hillslope and shoreline Local relief (concave, convex, none): concave Slope (%): 1 to 4%  
 Subregion (LRR): A Lat: 47 36 39.60 Long: 122 12 40.22 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: <b>Wetland B is located along the lake shoreline inland of a riprap bulkhead. Vegetation appears to be growing within soil material accumulated on top of riprap material. Mowed lawn is located inland of the wetland.</b>			

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	2 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	4 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	50 (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 foot radius)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = _____, 20% = _____	0	= Total Cover		UPL species _____	x5 = _____
Herb Stratum (Plot size: 3 foot radius)				Column Totals: _____ (A)	_____ (B)
1. <u>Phalaris arundinacea</u>	10	no	FACW	Prevalence Index = B/A = _____	
2. <u>Equisetum arvense</u>	15	no	FAC		
3. <u>Juncus effuses</u>	30	yes	FACW	Hydrophytic Vegetation Indicators:	
4. <u>Mowed grass</u>	25	yes	FAC	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
5. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
6. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
8. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
9. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
10. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
11. _____	_____	_____	_____		
50% = 0, 20% = 2	100	= Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot size: 3 foot radius)					
1. <u>Helix heder</u>	10	yes	FACU		
2. <u>Convolvulus arvensis</u>	25	yes	UPL		
50% = 1, 20% = 1	35	= Total Cover			
% Bare Ground in Herb Stratum 0					

Remarks: Dominant wetland vegetation cover per the dominance test, FACU vegetation includes vine species growing into the wetland.

**SOIL**Sampling Point: Wetland B SP5 Wet**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
<u>0 to 5</u>	<u>10YR 3/1</u>	<u>100</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>silt loam</u>	
<u>5 to 18</u>	<u>7.5YR 4/1</u>	<u>100</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>sandy loam</u>	<u>sandy loam with gravel.</u>
_____	_____	_____	_____	_____	_____	_____	_____	<u>organic debris in matrix</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                       | <input type="checkbox"/> Sandy Redox (S5)                                |
| <input type="checkbox"/> Histic Epipedon (A2)                | <input type="checkbox"/> Stripped Matrix (S6)                            |
| <input type="checkbox"/> Black Histic (A3)                   | <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> |
| <input type="checkbox"/> Hydrogen Sulfide (A4)               | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)   | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input checked="" type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)            | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)            | <input type="checkbox"/> Redox Depressions (F8)                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**Yes ☒ No ☐

Remarks: 1 chroma

**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                      |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <b>(except MLRA 1, 2, 4A, and 4B)</b>                                   |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Salt Crust (B11)                               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Aquatic Invertebrates (B13)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                     |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)                  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b> |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                     |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (2 or more required)

- |  |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |
| <b>(MLRA 1, 2, 4A, and 4B)</b>                                     |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>     |
| <input type="checkbox"/> Frost-Heave Hummocks (D7)                 |

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☒ No ☐ Depth (inches): 4Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): at surface**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface is saturated and standing water at 4 inches.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Meydenbauer Bay Park Phase I City/County: Bellevue/King Sampling Date: June 10, 2014  
 Applicant/Owner: City of Bellevue State: WA Sampling Point: Wetland C SP6 Up  
 Investigator(s): C. Douglas & A. Spooner Section, Township, Range: S31, T25N, R5E  
 Landform (hillslope, terrace, etc.): Hillslope & shoreline Local relief (concave, convex, none): none Slope (%): 1 to 5%  
 Subregion (LRR): A Lat: 47 36 39.60 Long: 122 12 40.22 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: <b>Wetland C is located along the lake shoreline inland of a riprap bulkhead. Vegetation growing within soil on top of riprap 6 inches deep in some areas. Wetland is very narrow and mowed grass associated with the park is located inland of the wetland.</b>		

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 foot radius)				Prevalence Index worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: 3 foot radius)				Column Totals: _____ (A) _____ (B)
1. <u>Berberis sp</u>	<u>50</u>	<u>yes</u>	<u>UPL</u>	Prevalence Index = B/A = _____
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>1</u> , 20% = <u>0</u>	<u>50</u>	= Total Cover		
Woody Vine Stratum (Plot size: 3 foot radius)				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>50</u>				

Remarks: Only plantings are landscape plantings; Berberis sp. planted in a row approximately 6-ft O.C.

**SOIL**Sampling Point: Wetland C SP6 Up**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
<u>0 to 18</u>	<u>10YR 4/4</u>	<u>100</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>silty loam</u>	<u>topsoil import</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                                |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                            |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b> |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**Yes ☐ No ☒

Remarks: 4 chroma, landscaping area with topsoil material

**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                      |
| <input type="checkbox"/> High Water Table (A2)                     | <b>(except MLRA 1, 2, 4A, and 4B)</b>                                   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Salt Crust (B11)                               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Aquatic Invertebrates (B13)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                     |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)                  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b> |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                     |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

Secondary Indicators (2 or more required)

- |  |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |
| <b>(MLRA 1, 2, 4A, and 4B)</b>                                     |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>     |
| <input type="checkbox"/> Frost-Heave Hummocks (D7)                 |

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): \_\_\_\_\_**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: no hydrology present



# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Meydenbauer Bay Park Phase I City/County: Bellevue/King Sampling Date: June 10, 2014  
 Applicant/Owner: City of Bellevue State: WA Sampling Point: Wetland C SP7 Wet  
 Investigator(s): C. Douglas & A. Spooner Section, Township, Range: S31, T25N, R5E  
 Landform (hillslope, terrace, etc.): Hillslope and shoreline Local relief (concave, convex, none): concave Slope (%): 1 to 5%  
 Subregion (LRR): A Lat: 47 36 39.60 Long: 122 12 40.22 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood gravelly sandy loam, 15 to 30 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: <b>Wetland C is located along the lake shoreline inland of a riprap bulkhead. Vegetation growing within soil on top of riprap 6 inches deep in some areas. Wetland is very narrow and mowed grass associated with the park is located inland of the wetland.</b>			

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 foot radius)				Prevalence Index worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
3. _____	_____	_____	_____	OBL species _____ x1 = _____
4. _____	_____	_____	_____	FACW species _____ x2 = _____
5. _____	_____	_____	_____	FAC species _____ x3 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		FACU species _____ x4 = _____
Herb Stratum (Plot size: 3 foot radius)				UPL species _____ x5 = _____
1. <u>Phalaris arundinacea</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	Column Totals: _____ (A) _____ (B)
2. <u>Ranunculus repens</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	Prevalence Index = B/A = _____
3. <u>Juncus effuses</u>	<u>35</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. <u>Holcus lanatus</u>	<u>20</u>	<u>no</u>	<u>FAC</u>	
5. <u>Iris pseudacorus</u>	<u>35</u>	<u>yes</u>	<u>OBL</u>	
6. <u>Poliga sp.</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>0</u> , 20% = <u>2</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: 3 foot radius)				
1. <u>Convolvulus arvensis</u>	<u>35</u>	<u>yes</u>	<u>UPL</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
50% = <u>1</u> , 20% = <u>0</u>	<u>35</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				

Remarks: Dominant wetland vegetation cover per the dominance test, UPL vegetation includes vine species growing into the wetland.

**SOIL**Sampling Point: Wetland C SP7 Wet**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 to 6	7.5YR 3/1	100	None	None	None	None	sandy loam	sandy loam with gravel
_____	_____	_____	_____	_____	_____	_____	_____	amongst riprap; could not penetrate
_____	_____	_____	_____	_____	_____	_____	_____	more than 6"
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Depleted Below Dark Surface (A11)  
☒ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 2 cm Muck (A10)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**Yes ☒ No ☐

Remarks: 1 chroma with no redox features, soils penetrable to about 6 inches before hitting the top of riprap material

**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☒ High Water Table (A2)  
☒ Saturation (A3)  
☐ Water Marks (B1)  
☐ Sediment Deposits (B2)  
☐ Drift Deposits (B3)  
☐ Algal Mat or Crust (B4)  
☐ Iron Deposits (B5)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Sparsely Vegetated Concave Surface (B8)

- ☐ Water-Stained Leaves (B9)  
**(except MLRA 1, 2, 4A, and 4B)**  
☐ Salt Crust (B11)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Tilled Soils (C6)  
☐ Stunted or Stresses Plants (D1) **(LRR A)**  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9)  
**(MLRA 1, 2, 4A, and 4B)**  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Geomorphic Position (D2)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)  
☐ Raised Ant Mounds (D6) **(LRR A)**  
☐ Frost-Heave Hummocks (D7)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☒ No ☐ Depth (inches): 11Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): at surface**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Due to riprap, the shovel could not penetrate beyond 6". 11" standing water assumed based on adjacent lake elevation.

## APPENDIX C

# WASHINGTON STATE DEPARTMENT OF ECOLOGY WETLAND RATING FORMS

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Wetland name or number A

### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users

Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland A Date of site visit: 61014

Rated by C. K. Douglas & A. H. Spooner Trained by Ecology? Yes ☒ No ☐ Date of training May 07'

SEC: 31 TOWNSHIP: 25N RANGE: 5E Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure        Estimated size .026 acres

### SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☐ III ☐ IV ☒

Category I = Score  $\geq 70$

Category II = Score 51-69

Category III = Score 30-50

Category IV = Score  $< 30$

Score for Water Quality Functions

2

Score for Hydrologic Functions

2

Score for Habitat Functions

10

**TOTAL score for Functions**

14

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

**Final Category** (choose the “highest” category from above)

IV

#### Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	<input type="checkbox"/>

**Does the wetland unit being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

<b>Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)</b>	<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

*To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.*

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

## Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?

NO – go to 2

YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe** **NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

\_\_\_ At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO – go to 4

YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☒ The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*

NO - go to 5

**YES – The wetland class is Slope**

**5. Does the entire wetland unit *meet all* of the following criteria?**

\_\_\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

\_\_\_\_\_ The overbank flooding occurs at least once every two years.

*NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.*

NO - go to 6      **YES** – The wetland class is **Riverine**

**6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.***

NO – go to 7      **YES** – The wetland class is **Depressional**

**7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.**

NO – go to 8      **YES** – The wetland class is **Depressional**

**8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.**

<i>HGM Classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.



Wetland name or number A

<b>S Slope Wetlands</b> WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		<b>Points</b> (only 1 score per box)
<b>S</b>	<b>S 1. Does the wetland unit have the <u>potential</u> to improve water quality?</b>	(see p.64)
<b>S</b>	S 1.1 Characteristics of average slope of unit: Slope is 1% or less ( <i>a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance</i> ) points = 3 Slope is 1% - 2% points = 2 Slope is 2% - 5% points = 1 Slope is greater than 5% points = 0	1
<b>S</b>	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES = 3 points NO = 0 points	0
<b>S</b>	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: <i>Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.</i> Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > 1/2 of area points = 2 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons	Figure ____  0
<b>S</b>	<b>Total for S 1</b> Add the points in the boxes above	1
<b>S</b>	<b>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>  — Grazing in the wetland or within 150ft — Untreated stormwater discharges to wetland — Tilled fields, logging, or orchards within 150 feet of wetland <input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other _____ <b>YES multiplier is 2 NO multiplier is 1</b>	(see p.67)          multiplier 2
<b>S</b>	<b>TOTAL - Water Quality Functions</b> Multiply the score from S1 by S2 Add score to table on p. 1	2

Comments

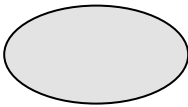
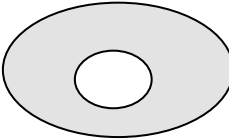
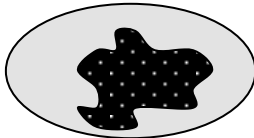
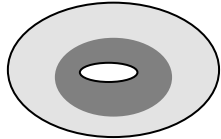
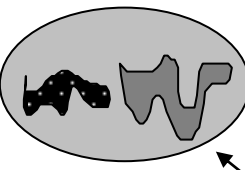
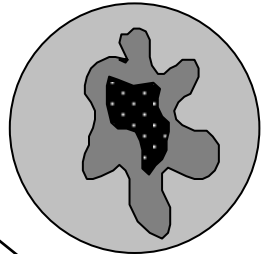
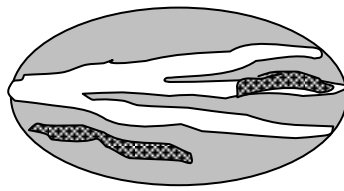
Wetland name or number A

<b>S Slope Wetlands</b> HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion		<b>Points</b> (only 1 score per box)
	<b>S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?</b>	(see p.68)
<b>S</b>	<p>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually &gt; 1/8in), or dense enough, to remain erect during surface flows)</p> <p>Dense, uncut, <b>rigid</b> vegetation covers &gt; 90% of the area of the wetland. points = 6</p> <p>Dense, uncut, <b>rigid</b> vegetation &gt; 1/2 area of wetland points = 3</p> <p>Dense, uncut, <b>rigid</b> vegetation &gt; 1/4 area points = 1</p> <p>More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0</p>	0
<b>S</b>	<p>S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area.</p> <p>YES points = 2</p> <p>NO points = 0</p>	2
<b>S</b>	Add the points in the boxes above	2
<b>S</b>	<p><b>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b></p> <p>Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.</p> <p>— Wetland has surface runoff that drains to a river or stream that has flooding problems</p> <p>— Other _____</p> <p>(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam))</p> <p><b>YES multiplier is 2 NO multiplier is 1</b></p>	(see p. 70)
<b>S</b>	<p><b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4</p> <p>Add score to table on p. 1</p>	2

**Comments**

<b>These questions apply to wetlands of all HGM classes.</b>		<b>Points</b> (only 1 score per box)																								
<b>HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat</b>																										
<b>H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?</b>																										
<p><b>H 1.1 Vegetation structure (see p. 72)</b>  Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p><input type="checkbox"/> Aquatic bed  <input checked="" type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt;30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt;30% cover)  If the unit has a forested class check if:  <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon  Add the number of vegetation structures that qualify. If you have:</p> <table> <tr> <td>4 structures or more</td> <td>points = 4</td> </tr> <tr> <td>3 structures</td> <td>points = 2</td> </tr> <tr> <td>2 structures</td> <td>points = 1</td> </tr> <tr> <td>1 structure</td> <td>points = 0</td> </tr> </table> <p>Map of Cowardin vegetation classes</p>		4 structures or more	points = 4	3 structures	points = 2	2 structures	points = 1	1 structure	points = 0	<p><b>Figure</b> <u>    </u></p> <p>0</p>																
4 structures or more	points = 4																									
3 structures	points = 2																									
2 structures	points = 1																									
1 structure	points = 0																									
<p><b>H 1.2. Hydroperiods (see p. 73)</b>  Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)</p> <table> <tr> <td><input type="checkbox"/> Permanently flooded or inundated</td> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td><input type="checkbox"/> Seasonally flooded or inundated</td> <td>3 types present</td> <td>points = 2</td> </tr> <tr> <td><input checked="" type="checkbox"/> Occasionally flooded or inundated</td> <td>2 types present</td> <td>point = 1</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td>1 type present</td> <td>points = 0</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> <b>Lake-fringe wetland = 2 points</b></td> </tr> <tr> <td colspan="3"><input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b></td> </tr> </table> <p>Map of hydroperiods</p>		<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3	<input type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2	<input checked="" type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1	<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0	<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland			<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland			<input type="checkbox"/> <b>Lake-fringe wetland = 2 points</b>			<input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b>			<p><b>Figure</b> <u>    </u></p> <p>1</p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3																								
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<input checked="" type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1																								
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<input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b>																										
<p><b>H 1.3. Richness of Plant Species (see p. 75)</b>  Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. (different patches of the same species can be combined to meet the size threshold)  You do not have to name the species.  Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle</p> <p>If you counted:</p> <table> <tr> <td>&gt; 19 species</td> <td>points = 2</td> </tr> <tr> <td>5 - 19 species</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p>		> 19 species	points = 2	5 - 19 species	points = 1	< 5 species	points = 0	<p>1</p>																		
> 19 species	points = 2																									
5 - 19 species	points = 1																									
< 5 species	points = 0																									

Total for page 2

<p><b>H 1.4. Interspersion of habitats (see p. 76)</b> Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p>	<p><b>Figure</b> <u>    </u></p> <p style="text-align: center; font-size: 2em;">1</p>
<p><b>H 1.5. Special Habitat Features: (see p. 77)</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt;4in. diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>)</p> <p><input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p style="text-align: center; font-size: 2em;">0</p>
<p style="text-align: right;"><b>H 1. TOTAL Score</b> - potential for providing habitat <i>Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</i></p>	<p style="text-align: center; font-size: 2em;">3</p>

**Comments**

<b>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</b>	
<p><b>H 2.1 Buffers</b> (<i>see p. 80</i>)  <i>Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <ul style="list-style-type: none"> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) <b>Points = 5</b></li> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. <b>Points = 4</b></li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. <b>Points = 4</b></li> <li><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference, . <b>Points = 3</b></li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. <b>Points = 3</b></li> </ul> <p style="text-align: center;"><b>If buffer does not meet any of the criteria above</b></p> <ul style="list-style-type: none"> <li>— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></li> <li>— No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></li> <li>— Heavy grazing in buffer. <b>Points = 1</b></li> <li>— Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland <b>Points = 0.</b></li> <li>— Buffer does not meet any of the criteria above. <b>Points = 1</b></li> </ul> <p style="text-align: right;">Aerial photo showing buffers</p>	<p><b>Figure</b> <u>    </u></p> <p style="text-align: center;">3</p>
<p><b>H 2.2 Corridors and Connections</b> (<i>see p. 81</i>)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;">YES = <b>4 points</b> (<i>go to H 2.3</i>)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = <b>2 points</b> (<i>go to H 2.3</i>)                      NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>within 3 mi of a large field or pasture (&gt;40 acres) OR</li> <li>within 1 mi of a lake greater than 20 acres?</li> </ul> <p style="text-align: center;"><b>YES = 1 point</b>                      NO = <b>0 points</b></p>	<p style="text-align: center;">1</p>

Total for page 4

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm> )

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.
- ☐ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

If wetland has **3 or more** priority habitats = **4 points**

If wetland has **2** priority habitats = **3 points**

If wetland has **1** priority habitat = **1 point**

No habitats = 0 points

*Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*



Wetland name or number A

<p><b>H 2.4 Wetland Landscape</b> (<i>choose the <b>one</b> description of the landscape around the wetland that best fits</i>) (<i>see p. 84</i>)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. <span style="float: right;">points = 5</span></p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile <span style="float: right;">points = 5</span></p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed <span style="float: right;">points = 3</span></p> <p>The wetland is Lake-fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetland within ½ mile <span style="float: right;">points = 3</span></p> <p>There is at least 1 wetland within ½ mile. <span style="float: right;">points = 2</span></p> <p>There are no wetlands within ½ mile. <span style="float: right;">points = 0</span></p>	2
<p><b>H 2. TOTAL Score</b> - opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	7
<p>TOTAL for H 1 from page 14</p>	3
<p><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1</p>	10

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

*Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.*

<b>Wetland Type</b>	<b>Category</b>
<p><i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i></p> <p><b>SC 1.0 Estuarine wetlands (<i>see p. 86</i>)</b></p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> <li>— The dominant water regime is tidal,</li> <li>— Vegetated, and</li> <li>— With a salinity greater than 0.5 ppt.</li> </ul> <p>YES = Go to SC 1.1                      NO <u>X</u></p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p>YES = Category I                      NO go to SC 1.2</p>	<b>Cat. I</b>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	<b>Cat. I</b> <b>Cat. II</b>  <b>Dual rating I/II</b>

<p><b>SC 2.0 Natural Heritage Wetlands</b> (<i>see p. 87</i>)  Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)  S/T/R information from Appendix D ____ or accessed from WNHP/DNR web site ____</p> <p>YES ____ – contact WNHP/DNR (see p. 79) and go to SC 2.2      NO <u>X</u></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?  YES = Category I      NO <u>X</u> not a Heritage Wetland</p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0 Bogs</b> (<i>see p. 87</i>)  Does the wetland unit (<b>or any part of the unit</b>) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3      No - go to Q. 2</li> <li>Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?  Yes - go to Q. 3      No - Is not a bog for purpose of rating</li> <li>Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?  Yes – Is a bog for purpose of rating      No - go to Q. 4</li> </ol> <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</p> <ol style="list-style-type: none"> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> <li>YES = Category I      No <u>X</u> Is not a bog for purpose of rating</li> </ol>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Forested Wetlands (see p. 90)</b>  Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests:</b> (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> </ul> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <ul style="list-style-type: none"> <li>— <b>Mature forests:</b> (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.</li> </ul> <p>YES = Category I                      NO <u>X</u> not a forested wetland with special characteristics</p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</b>  Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p>YES = Go to SC 5.1                      NO <u>X</u> not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 acre (4350 square feet)</li> </ul> <p>YES = Category I                      NO = Category II</p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>

Wetland name or number A

<p><b>SC 6.0 Interdunal Wetlands</b> (<i>see p. 93</i>)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES - go to SC 6.1                      NO <u>X</u> not an interdunal wetland for rating</p> <p><b><i>If you answer yes you will still need to rate the wetland based on its functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula- lands west of SR 103</li> <li>• Grayland-Westport- lands west of SR 105</li> <li>• Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?</p> <p>YES = Category II                      NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	<p><b>Cat. II</b></p> <p><b>Cat. III</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p><i>Choose the “highest” rating if wetland falls into several categories, and record on p. 1.</i></p> <p>If you answered NO for all types enter “Not Applicable” on p.1</p>	<p>n/a</p>

Wetland name or number B

### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users

Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland B Date of site visit: 61014

Rated by C. K. Douglas & A. H. Spooner Trained by Ecology? Yes ☒ No ☐ Date of training May 07'

SEC: 31 TOWNSHIP: 25N RANGE: 5E Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure        Estimated size .002 acres

### SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☐ III ☐ IV ☒

Category I = Score  $\geq 70$

Category II = Score 51-69

Category III = Score 30-50

Category IV = Score  $< 30$

Score for Water Quality Functions

8

Score for Hydrologic Functions

0

Score for Habitat Functions

12

**TOTAL score for Functions**

**20**

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

**Final Category** (choose the “highest” category from above)

IV

#### Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	<input checked="" type="checkbox"/>
Mature Forest	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

**Does the wetland unit being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

<b>Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)</b>	<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

*To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.*

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.



## Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?  
NO – go to 2                      YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – **Freshwater Tidal Fringe**    NO – **Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.    ).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.  
Groundwater and surface water runoff are NOT sources of water to the unit.  
NO – go to 3                      YES – The wetland class is **Flats**

If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet both** of the following criteria?  
☒ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;  
☒ At least 30% of the open water area is deeper than 6.6 ft (2 m)?  
NO – go to 4                      YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?  
\_\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
\_\_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
☒ The water leaves the wetland **without being impounded**?  
NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*  
NO - go to 5                      YES – The wetland class is **Slope**

5. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

\_\_\_\_\_ The overbank flooding occurs at least once every two years.

*NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.*

NO - go to 6      **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7      **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8      **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. **NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

<i>HGM Classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

<b>L Lake-fringe Wetlands</b> WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		<b>Points</b> (only 1 score per box)
<b>L</b>	<b>L 1. Does the wetland unit have the <u>potential</u> to improve water quality?</b>	(see p.59)
<b>L</b>	<p>L 1.1 Average width of vegetation along the lakeshore (<i>use polygons of Cowardin classes</i>):</p> <p>Vegetation is more than 33ft (10m) wide points = 6</p> <p>Vegetation is more than 16 (5m) wide and &lt;33ft points = 3</p> <p>Vegetation is more than 6ft (2m) wide and &lt;16 ft points = 1</p> <p>Vegetation is less than 6 ft wide points = 0</p> <p>Map of Cowardin classes with widths marked</p>	<p><b>Figure</b> ____</p> <p>0</p>
<b>L</b>	<p>L 1.2 Characteristics of the vegetation in the wetland: <i>choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.</i></p> <p>Cover of herbaceous plants is &gt;90% of the vegetated area points = 6</p> <p>Cover of herbaceous plants is &gt;2/3 of the vegetated area points = 4</p> <p>Cover of herbaceous plants is &gt;1/3 of the vegetated area points = 3</p> <p>Other vegetation that is not aquatic bed or herbaceous covers &gt; 2/3 unit points = 3</p> <p>Other vegetation that is not aquatic bed in &gt; 1/3 vegetated area points = 1</p> <p>Aquatic bed vegetation and open water cover &gt; 2/3 of the unit points = 0</p> <p>Map with polygons of different vegetation types</p>	<p><b>Figure</b> ____</p> <p>4</p>
<b>L</b>	Add the points in the boxes above	4
<b>L</b>	<p><b>L 2. Does the wetland have the <u>opportunity</u> to improve water quality?</b></p> <p>Answer YES if you know or believe there are pollutants in the lake water, or polluted surface water flowing through the unit to the lake. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i></p> <p>— Wetland is along the shores of a lake or reservoir that does not meet water quality standards</p> <p>— Grazing in the wetland or within 150ft</p> <p>— Polluted water discharges to wetland along upland edge</p> <p>— Tilled fields or orchards within 150 feet of wetland</p> <p><input checked="" type="checkbox"/> Residential or urban areas are within 150 ft of wetland</p> <p><input checked="" type="checkbox"/> Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore)</p> <p><input checked="" type="checkbox"/> Power boats with gasoline or diesel engines use the lake</p> <p>— Other _____</p> <p><b>YES multiplier is 2      NO multiplier is 1</b></p>	<p>(see p.61)</p> <p>multiplier</p> <p>2</p>
<b>L</b>	<p><b><u>TOTAL</u> - Water Quality Functions</b> Multiply the score from L1 by L2</p> <p>Add score to table on p. 1</p>	8

Comments

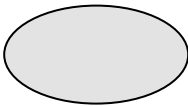
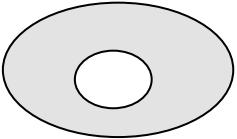
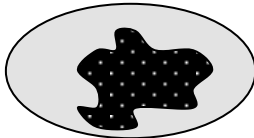
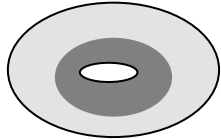
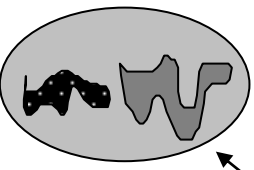
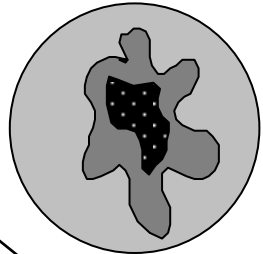
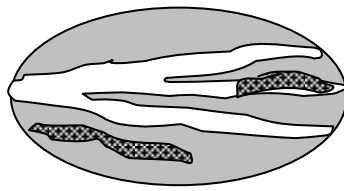
Wetland name or number B

<b>L Lake-fringe Wetlands</b> <b>HYDROLOGIC FUNCTIONS</b> - Indicators that the wetland unit functions to reduce shoreline erosion		<b>Points</b> (only 1 score per box)
<b>L</b>	<b>L 3. Does the wetland unit have the <u>potential</u> to reduce shoreline erosion?</b>	(see p.62)
<b>L</b>	L 3 Distance along shore and average width of Cowardin classes along the lakeshore ( <b>do not</b> include aquatic bed): ( <i>choose the highest scoring description that matches conditions in the wetland</i> ) <div style="display: flex; justify-content: space-between;"> <div>             &gt; ¾ of distance is shrubs or forest at least 33 ft (10m) wide              &gt; ¾ of distance is shrubs or forest at least 6 ft. (2 m) wide              &gt; ¼ distance is shrubs or forest at least 33 ft (10m) wide              Vegetation is at least 6 ft (2m) wide (any type except aquatic bed)              Vegetation is less than 6 ft (2m) wide (any type except aquatic bed)           </div> <div>             points = 6              points = 4              points = 4              points = 2              points = 0           </div> </div> Aerial photo or map with Cowardin vegetation classes	<b>Figure</b> ____          0
<b>L</b>	<i>Record the points from the box above</i>	0
<b>L</b>	<b>L 4. Does the wetland unit have the <u>opportunity</u> to reduce erosion?</b> Are there features along the shore that will be impacted if the shoreline erodes? <i>Note which of the following conditions apply.</i> <ul style="list-style-type: none"> <li>— There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion.</li> <li>— There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other wetlands) than can be damaged by shoreline erosion</li> <li>— Other _____</li> </ul> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span><b>YES</b> multiplier is 2</span> <span><b>NO</b> multiplier is 1</span> </div>	(see p.63)          multiplier  1
<b>L</b>	<b>TOTAL - Hydrologic Functions</b> Multiply the score from L 3 by L 4 <i>Add score to table on p. 1</i>	0

**Comments**

<b>These questions apply to wetlands of all HGM classes.</b>		<b>Points</b> (only 1 score per box)												
<b>HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat</b>														
<b>H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?</b>														
<p><b>H 1.1 Vegetation structure (see p. 72)</b>  Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p><input type="checkbox"/> Aquatic bed  <input checked="" type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt;30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt;30% cover)</p> <p>If the unit has a forested class check if:  <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon</p> <p>Add the number of vegetation structures that qualify. If you have:</p> <table> <tr> <td>4 structures or more</td> <td>points = 4</td> </tr> <tr> <td>3 structures</td> <td>points = 2</td> </tr> <tr> <td>2 structures</td> <td>points = 1</td> </tr> <tr> <td>1 structure</td> <td>points = 0</td> </tr> </table> <p>Map of Cowardin vegetation classes</p>		4 structures or more	points = 4	3 structures	points = 2	2 structures	points = 1	1 structure	points = 0	<p><b>Figure</b> <u>    </u></p> <p>0</p>				
4 structures or more	points = 4													
3 structures	points = 2													
2 structures	points = 1													
1 structure	points = 0													
<p><b>H 1.2. Hydroperiods (see p. 73)</b>  Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)</p> <table> <tr> <td><input type="checkbox"/> Permanently flooded or inundated</td> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td><input type="checkbox"/> Seasonally flooded or inundated</td> <td>3 types present</td> <td>points = 2</td> </tr> <tr> <td><input type="checkbox"/> Occasionally flooded or inundated</td> <td>2 types present</td> <td>point = 1</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td>1 type present</td> <td>points = 0</td> </tr> </table> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p><input checked="" type="checkbox"/> <b>Lake-fringe wetland = 2 points</b>  <input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b></p> <p>Map of hydroperiods</p>		<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3	<input type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2	<input type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1	<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0	<p><b>Figure</b> <u>    </u></p> <p>2</p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3												
<input type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2												
<input type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1												
<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0												
<p><b>H 1.3. Richness of Plant Species (see p. 75)</b>  Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. (different patches of the same species can be combined to meet the size threshold)  You do not have to name the species.  Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle</p> <p>If you counted:</p> <table> <tr> <td>&gt; 19 species</td> <td>points = 2</td> </tr> <tr> <td>5 - 19 species</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p>		> 19 species	points = 2	5 - 19 species	points = 1	< 5 species	points = 0	<p>1</p>						
> 19 species	points = 2													
5 - 19 species	points = 1													
< 5 species	points = 0													

Total for page 3

<p><b>H 1.4. Interspersion of habitats (see p. 76)</b> Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p>	<p><b>Figure</b> <u>    </u></p> <p style="text-align: center; font-size: 2em;">1</p>
<p><b>H 1.5. Special Habitat Features: (see p. 77)</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt;4in. diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>)</p> <p><input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p style="text-align: center; font-size: 2em;">0</p>
<p style="text-align: right;"><b>H 1. TOTAL</b> Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	<p style="text-align: center; font-size: 2em;">4</p>

**Comments**

<b>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</b>	
<p><b>H 2.1 Buffers</b> (<i>see p. 80</i>)  <i>Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <ul style="list-style-type: none"> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) <b>Points = 5</b></li> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. <b>Points = 4</b></li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. <b>Points = 4</b></li> <li><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference, . <b>Points = 3</b></li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. <b>Points = 3</b></li> </ul> <p style="text-align: center;"><b>If buffer does not meet any of the criteria above</b></p> <ul style="list-style-type: none"> <li>— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></li> <li>— No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></li> <li>— Heavy grazing in buffer. <b>Points = 1</b></li> <li>— Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland <b>Points = 0.</b></li> <li>— Buffer does not meet any of the criteria above. <b>Points = 1</b></li> </ul> <p style="text-align: right;">Aerial photo showing buffers</p>	<p><b>Figure</b> <u>    </u></p> <p style="text-align: center;">3</p>
<p><b>H 2.2 Corridors and Connections</b> (<i>see p. 81</i>)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;">YES = <b>4 points</b> (<i>go to H 2.3</i>)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = <b>2 points</b> (<i>go to H 2.3</i>)                      NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>within 3 mi of a large field or pasture (&gt;40 acres) OR</li> <li>within 1 mi of a lake greater than 20 acres?</li> </ul> <p style="text-align: center;">YES = <b>1 point</b>                      NO = <b>0 points</b></p>	<p style="text-align: center;">1</p>

Total for page 4



H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm> )

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.
- ☐ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

If wetland has **3 or more** priority habitats = **4 points**

If wetland has **2** priority habitats = **3 points**

If wetland has **1** priority habitat = **1 point**

No habitats = 0 points

*Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*

Wetland name or number B

<p><b>H 2.4 Wetland Landscape</b> (<i>choose the <b>one</b> description of the landscape around the wetland that best fits</i>) (<i>see p. 84</i>)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. <span style="float: right;">points = 5</span></p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile <span style="float: right;">points = 5</span></p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed <span style="float: right;">points = 3</span></p> <p>The wetland is Lake-fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetland within ½ mile <span style="float: right;">points = 3</span></p> <p>There is at least 1 wetland within ½ mile. <span style="float: right;">points = 2</span></p> <p>There are no wetlands within ½ mile. <span style="float: right;">points = 0</span></p>	3
<p><b>H 2. TOTAL Score</b> - opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	8
<p>TOTAL for H 1 from page 14</p>	4
<p><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1</p>	12

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

*Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.*

<b>Wetland Type</b>	<b>Category</b>
<p><i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i></p> <p><b>SC 1.0 Estuarine wetlands (<i>see p. 86</i>)</b></p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> <li>— The dominant water regime is tidal,</li> <li>— Vegetated, and</li> <li>— With a salinity greater than 0.5 ppt.</li> </ul> <p>YES = Go to SC 1.1                      NO <u>X</u></p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p>YES = Category I                      NO go to SC 1.2</p>	<b>Cat. I</b>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	<b>Cat. I</b> <b>Cat. II</b>  <b>Dual rating I/II</b>

<p><b>SC 2.0 Natural Heritage Wetlands</b> (<i>see p. 87</i>)  Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)  S/T/R information from Appendix D ____ or accessed from WNHP/DNR web site ____</p> <p>YES ____ – contact WNHP/DNR (see p. 79) and go to SC 2.2      NO ____</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?  YES = Category I      NO <u>X</u> not a Heritage Wetland</p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0 Bogs</b> (<i>see p. 87</i>)  Does the wetland unit (<b>or any part of the unit</b>) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> <li>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3      No - go to Q. 2</li> <li>2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?  Yes - go to Q. 3      No - Is not a bog for purpose of rating</li> <li>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?  Yes – Is a bog for purpose of rating      No - go to Q. 4  NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</li> </ol> <ol style="list-style-type: none"> <li>1. Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> <li>2. YES = Category I      No <u>X</u> Is not a bog for purpose of rating</li> </ol>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Forested Wetlands (see p. 90)</b>  Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests:</b> (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> </ul> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <ul style="list-style-type: none"> <li>— <b>Mature forests:</b> (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.</li> </ul> <p>YES = Category I                      NO <u>X</u> not a forested wetland with special characteristics</p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</b>  Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p>YES = Go to SC 5.1                      NO <u>X</u> not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 acre (4350 square feet)</li> </ul> <p>YES = Category I                      NO = Category II</p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>

Wetland name or number B

<p><b>SC 6.0 Interdunal Wetlands</b> (<i>see p. 93</i>)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES - go to SC 6.1                      NO <u>X</u> not an interdunal wetland for rating</p> <p><b><i>If you answer yes you will still need to rate the wetland based on its functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula- lands west of SR 103</li> <li>• Grayland-Westport- lands west of SR 105</li> <li>• Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?</p> <p>YES = Category II                      NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	<p><b>Cat. II</b></p> <p><b>Cat. III</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p><i>Choose the “highest” rating if wetland falls into several categories, and record on p. 1.</i></p> <p>If you answered NO for all types enter “Not Applicable” on p.1</p>	<p>n/a</p>

Wetland name or number C

### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users

Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland C Date of site visit: 61014

Rated by C. K. Douglas & A. H. Spooner Trained by Ecology? Yes ☒ No ☐ Date of training May 07'

SEC: 31 TOWNSHIP: 25N RANGE: 5E Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure        Estimated size .01 acres

### SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☐ III ☐ IV ☒

Category I = Score  $\geq 70$   
Category II = Score 51-69  
Category III = Score 30-50  
Category IV = Score  $< 30$

Score for Water Quality Functions	8
Score for Hydrologic Functions	0
Score for Habitat Functions	12
<b>TOTAL score for Functions</b>	<b>20</b>

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

**Final Category** (choose the “highest” category from above)

IV

#### Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	<input checked="" type="checkbox"/>
Mature Forest	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>



### Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

## Classification of Wetland Units in Western Washington

**If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.**

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?  
NO – go to 2                      YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – **Freshwater Tidal Fringe**    NO – **Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.    ).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.  
Groundwater and surface water runoff are NOT sources of water to the unit.  
NO – go to 3                      YES – The wetland class is **Flats**

If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet both** of the following criteria?  
☒ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;  
☒ At least 30% of the open water area is deeper than 6.6 ft (2 m)?  
NO – go to 4                      YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?  
\_\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
\_\_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.  
☒ The water leaves the wetland **without being impounded**?  
NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*  
NO - go to 5                      YES – The wetland class is **Slope**

**5. Does the entire wetland unit *meet all* of the following criteria?**

\_\_\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

\_\_\_\_\_ The overbank flooding occurs at least once every two years.

*NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.*

NO - go to 6      **YES** – The wetland class is **Riverine**

**6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.***

NO – go to 7      **YES** – The wetland class is **Depressional**

**7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.**

NO – go to 8      **YES** – The wetland class is **Depressional**

**8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.**

<i>HGM Classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

<b>L Lake-fringe Wetlands</b>		<b>Points</b> (only 1 score per box)
<b>WATER QUALITY FUNCTIONS</b> - Indicators that the wetland unit functions to improve water quality		
<b>L</b>	<b>L 1. Does the wetland unit have the <u>potential</u> to improve water quality?</b>	(see p.59)
<b>L</b>	<p>L 1.1 Average width of vegetation along the lakeshore (<i>use polygons of Cowardin classes</i>):</p> <p>Vegetation is more than 33ft (10m) wide points = 6</p> <p>Vegetation is more than 16 (5m) wide and &lt;33ft points = 3</p> <p>Vegetation is more than 6ft (2m) wide and &lt;16 ft points = 1</p> <p>Vegetation is less than 6 ft wide points = 0</p> <p>Map of Cowardin classes with widths marked</p>	<p><b>Figure</b> ____</p> <p>0</p>
<b>L</b>	<p>L 1.2 Characteristics of the vegetation in the wetland: <i>choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.</i></p> <p>Cover of herbaceous plants is &gt;90% of the vegetated area points = 6</p> <p>Cover of herbaceous plants is &gt;2/3 of the vegetated area points = 4</p> <p>Cover of herbaceous plants is &gt;1/3 of the vegetated area points = 3</p> <p>Other vegetation that is not aquatic bed or herbaceous covers &gt; 2/3 unit points = 3</p> <p>Other vegetation that is not aquatic bed in &gt; 1/3 vegetated area points = 1</p> <p>Aquatic bed vegetation and open water cover &gt; 2/3 of the unit points = 0</p> <p>Map with polygons of different vegetation types</p>	<p><b>Figure</b> ____</p> <p>4</p>
<b>L</b>	Add the points in the boxes above	4
<b>L</b>	<p><b>L 2. Does the wetland have the <u>opportunity</u> to improve water quality?</b></p> <p>Answer YES if you know or believe there are pollutants in the lake water, or polluted surface water flowing through the unit to the lake. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i></p> <p>— Wetland is along the shores of a lake or reservoir that does not meet water quality standards</p> <p>— Grazing in the wetland or within 150ft</p> <p>— Polluted water discharges to wetland along upland edge</p> <p>— Tilled fields or orchards within 150 feet of wetland</p> <p><input checked="" type="checkbox"/> Residential or urban areas are within 150 ft of wetland</p> <p><input checked="" type="checkbox"/> Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore)</p> <p><input checked="" type="checkbox"/> Power boats with gasoline or diesel engines use the lake</p> <p>— Other _____</p> <p><b>YES multiplier is 2      NO multiplier is 1</b></p>	<p>(see p.61)</p> <p>multiplier</p> <p>2</p>
<b>L</b>	<p><b>TOTAL - Water Quality Functions</b> Multiply the score from L1 by L2</p> <p>Add score to table on p. 1</p>	8

Comments

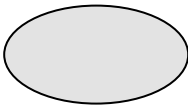
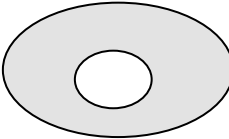
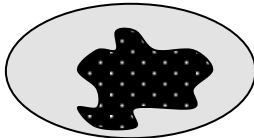
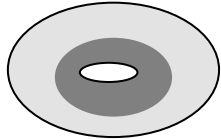
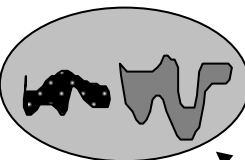
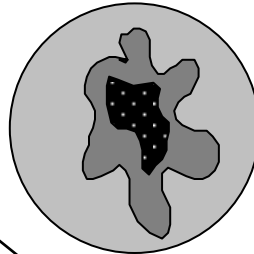
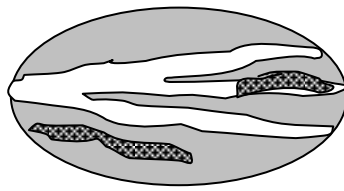
Wetland name or number C

<b>L Lake-fringe Wetlands</b> <b>HYDROLOGIC FUNCTIONS</b> - Indicators that the wetland unit functions to reduce shoreline erosion		<b>Points</b> (only 1 score per box)
<b>L</b>	<b>L 3. Does the wetland unit have the <u>potential</u> to reduce shoreline erosion?</b>	(see p.62)
<b>L</b>	L 3 Distance along shore and average width of Cowardin classes along the lakeshore ( <b>do not</b> include aquatic bed): ( <i>choose the highest scoring description that matches conditions in the wetland</i> ) <div style="display: flex; justify-content: space-between;"> <div>             &gt; ¾ of distance is shrubs or forest at least 33 ft (10m) wide              &gt; ¾ of distance is shrubs or forest at least 6 ft. (2 m) wide              &gt; ¼ distance is shrubs or forest at least 33 ft (10m) wide              Vegetation is at least 6 ft (2m) wide (any type except aquatic bed)              Vegetation is less than 6 ft (2m) wide (any type except aquatic bed)           </div> <div style="text-align: right;">             points = 6              points = 4              points = 4              points = 2              points = 0           </div> </div> Aerial photo or map with Cowardin vegetation classes	<b>Figure</b> ____          0
<b>L</b>	<i>Record the points from the box above</i>	0
<b>L</b>	<b>L 4. Does the wetland unit have the <u>opportunity</u> to reduce erosion?</b> Are there features along the shore that will be impacted if the shoreline erodes? <i>Note which of the following conditions apply.</i> <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion.  <input type="checkbox"/> There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other wetlands) than can be damaged by shoreline erosion  <input type="checkbox"/> Other _____           </div> <div style="margin-top: 10px;"> <b>YES</b> multiplier is <b>2</b>      <b>NO</b> multiplier is <b>1</b> </div>	(see p.63)          multiplier  2
<b>L</b>	<b>TOTAL - Hydrologic Functions</b> Multiply the score from L 3 by L 4 <i>Add score to table on p. 1</i>	0

**Comments**

<b>These questions apply to wetlands of all HGM classes.</b>		<b>Points</b> (only 1 score per box)																								
<b>HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat</b>																										
<b>H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?</b>																										
<p><b>H 1.1 Vegetation structure (see p. 72)</b>  Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p><input type="checkbox"/> Aquatic bed  <input checked="" type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt;30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt;30% cover)  If the unit has a forested class check if:  <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon  Add the number of vegetation structures that qualify. If you have:</p> <table> <tr> <td>4 structures or more</td> <td>points = 4</td> </tr> <tr> <td>3 structures</td> <td>points = 2</td> </tr> <tr> <td>2 structures</td> <td>points = 1</td> </tr> <tr> <td>1 structure</td> <td>points = 0</td> </tr> </table> <p>Map of Cowardin vegetation classes</p>		4 structures or more	points = 4	3 structures	points = 2	2 structures	points = 1	1 structure	points = 0	<p><b>Figure</b> <u>    </u></p> <p>0</p>																
4 structures or more	points = 4																									
3 structures	points = 2																									
2 structures	points = 1																									
1 structure	points = 0																									
<p><b>H 1.2. Hydroperiods (see p. 73)</b>  Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)</p> <table> <tr> <td><input type="checkbox"/> Permanently flooded or inundated</td> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td><input type="checkbox"/> Seasonally flooded or inundated</td> <td>3 types present</td> <td>points = 2</td> </tr> <tr> <td><input type="checkbox"/> Occasionally flooded or inundated</td> <td>2 types present</td> <td>point = 1</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td>1 type present</td> <td>points = 0</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</td> </tr> <tr> <td colspan="3"><input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</td> </tr> <tr> <td colspan="3"><input checked="" type="checkbox"/> <b>Lake-fringe wetland = 2 points</b></td> </tr> <tr> <td colspan="3"><input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b></td> </tr> </table> <p>Map of hydroperiods</p>		<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3	<input type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2	<input type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1	<input checked="" type="checkbox"/> Saturated only	1 type present	points = 0	<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland			<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland			<input checked="" type="checkbox"/> <b>Lake-fringe wetland = 2 points</b>			<input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b>			<p><b>Figure</b> <u>    </u></p> <p>2</p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3																								
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<input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b>																										
<p><b>H 1.3. Richness of Plant Species (see p. 75)</b>  Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. (different patches of the same species can be combined to meet the size threshold)  You do not have to name the species.  Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle</p> <p>If you counted:</p> <table> <tr> <td>&gt; 19 species</td> <td>points = 2</td> </tr> <tr> <td>5 - 19 species</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p>		> 19 species	points = 2	5 - 19 species	points = 1	< 5 species	points = 0	<p>1</p>																		
> 19 species	points = 2																									
5 - 19 species	points = 1																									
< 5 species	points = 0																									

Total for page 3

<p><b>H 1.4. Interspersion of habitats (see p. 76)</b> Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p>	<p><b>Figure</b> _____</p> <p style="text-align: center; font-size: 24pt;">1</p>
<p><b>H 1.5. Special Habitat Features: (see p. 77)</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt;4in. diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt;30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>)</p> <p><input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p style="text-align: center; font-size: 24pt;">0</p>
<p><b>H 1. TOTAL Score - potential for providing habitat</b> <i>Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</i></p>	<p style="font-size: 24pt;">4</p>

**Comments**

<b>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</b>	
<p><b>H 2.1 Buffers</b> (<i>see p. 80</i>)  <i>Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <ul style="list-style-type: none"> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) <b>Points = 5</b></li> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. <b>Points = 4</b></li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. <b>Points = 4</b></li> <li><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25% circumference, . <b>Points = 3</b></li> <li>— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. <b>Points = 3</b></li> </ul> <p style="text-align: center;"><b>If buffer does not meet any of the criteria above</b></p> <ul style="list-style-type: none"> <li>— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></li> <li>— No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></li> <li>— Heavy grazing in buffer. <b>Points = 1</b></li> <li>— Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland <b>Points = 0.</b></li> <li>— Buffer does not meet any of the criteria above. <b>Points = 1</b></li> </ul> <p style="text-align: right;">Aerial photo showing buffers</p>	<p><b>Figure</b> <u>    </u></p> <p style="text-align: center;">3</p>
<p><b>H 2.2 Corridors and Connections</b> (<i>see p. 81</i>)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;">YES = <b>4 points</b> (<i>go to H 2.3</i>)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = <b>2 points</b> (<i>go to H 2.3</i>)                      NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>within 3 mi of a large field or pasture (&gt;40 acres) OR</li> <li>within 1 mi of a lake greater than 20 acres?</li> </ul> <p style="text-align: center;">YES = <b>1 point</b>                      NO = <b>0 points</b></p>	<p style="text-align: center;">1</p>

Total for page 4



<p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a> )</u></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> <b>Biodiversity Areas and Corridors:</b> Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).</p> <p><input type="checkbox"/> <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (<u>Mature forests</u>) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p><input checked="" type="checkbox"/> <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p><input type="checkbox"/> <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p><input type="checkbox"/> <b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> <b>Snags and Logs:</b> Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p style="padding-left: 40px;">If wetland has <b>3 or more</b> priority habitats = <b>4 points</b></p> <p style="padding-left: 40px;">If wetland has <b>2</b> priority habitats = <b>3 points</b></p> <p style="padding-left: 40px;">If wetland has <b>1</b> priority habitat = <b>1 point</b>                      No habitats = 0 points</p> <p><i>Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)</i></p>	<p>1</p>
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<p><b>H 2.4 Wetland Landscape</b> (<i>choose the <b>one</b> description of the landscape around the wetland that best fits</i>) (<i>see p. 84</i>)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. <span style="float: right;">points = 5</span></p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile <span style="float: right;">points = 5</span></p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed <span style="float: right;">points = 3</span></p> <p>The wetland is Lake-fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetland within ½ mile <span style="float: right;">points = 3</span></p> <p>There is at least 1 wetland within ½ mile. <span style="float: right;">points = 2</span></p> <p>There are no wetlands within ½ mile. <span style="float: right;">points = 0</span></p>	3
<p><b>H 2. TOTAL Score</b> - opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	8
<p>TOTAL for H 1 from page 14</p>	4
<p><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1</p>	12

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

*Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.*

<b>Wetland Type</b>	<b>Category</b>
<p><i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i></p> <p><b>SC 1.0 Estuarine wetlands (<i>see p. 86</i>)</b></p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> <li>— The dominant water regime is tidal,</li> <li>— Vegetated, and</li> <li>— With a salinity greater than 0.5 ppt.</li> </ul> <p>YES = Go to SC 1.1                      NO <u>X</u></p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p>YES = Category I                      NO go to SC 1.2</p>	<b>Cat. I</b>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	<b>Cat. I</b> <b>Cat. II</b>  <b>Dual rating I/II</b>

<p><b>SC 2.0 Natural Heritage Wetlands</b> (<i>see p. 87</i>)  Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)  S/T/R information from Appendix D <u>    </u> or accessed from WNHP/DNR web site <u>    </u></p> <p>YES <u>    </u> – contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO <u>    </u></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?  YES = Category I    NO <u>X</u> not a Heritage Wetland</p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0 Bogs</b> (<i>see p. 87</i>)  Does the wetland unit (<b>or any part of the unit</b>) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3    No - go to Q. 2</p> <p>2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?  Yes - go to Q. 3    No - Is not a bog for purpose of rating</p> <p>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?  Yes – Is a bog for purpose of rating                      No - go to Q. 4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</p> <p>1. Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</p> <p>2. YES = Category I    No <u>X</u> Is not a bog for purpose of rating</p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Forested Wetlands (see p. 90)</b>  Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests:</b> (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> </ul> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <ul style="list-style-type: none"> <li>— <b>Mature forests:</b> (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.</li> </ul> <p>YES = Category I                      NO <u>X</u> not a forested wetland with special characteristics</p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</b>  Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p>YES = Go to SC 5.1                      NO <u>X</u> not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 acre (4350 square feet)</li> </ul> <p>YES = Category I                      NO = Category II</p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>

<p><b>SC 6.0 Interdunal Wetlands</b> (<i>see p. 93</i>)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES - go to SC 6.1                      NO <u>X</u> not an interdunal wetland for rating</p> <p><b><i>If you answer yes you will still need to rate the wetland based on its functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula- lands west of SR 103</li> <li>• Grayland-Westport- lands west of SR 105</li> <li>• Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?</p> <p>YES = Category II                      NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	<p><b>Cat. II</b></p> <p><b>Cat. III</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p><i>Choose the “highest” rating if wetland falls into several categories, and record on p. 1.</i></p> <p>If you answered NO for all types enter “Not Applicable” on p.1</p>	<p>n/a</p>

Wetland name or number A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 6/10/14  
Rated by C.K. Douglas, A.H. Spooner Trained by Ecology? X Yes \_\_\_ No Date of training May 2007  
HGM Class used for rating Slope Wetland has multiple HGM classes? \_\_\_ Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map ESRI Aerial Base Map

**OVERALL WETLAND CATEGORY** IV (based on functions X or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

\_\_\_\_\_ **Category I** – Total score = 23 - 27

\_\_\_\_\_ **Category II** – Total score = 20 - 22

\_\_\_\_\_ **Category III** – Total score = 16 - 19

13 **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H M <u>L</u>	H <u>M</u> L	<b>TOTAL</b>
Score Based on Ratings	<b>5</b>	<b>3</b>	<b>5</b>	<b>13</b>

**Score for each  
function based  
on three  
ratings  
(order of ratings  
is not  
important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	None

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☐ NO - go to 2

☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ NO - **Saltwater Tidal Fringe (Estuarine)**

☐ YES - **Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☐ NO - go to 3

☐ YES - The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☐ NO - go to 4

☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

NO - go to 5

☐ YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.



Wetland name or number A

NO – go to 6

**YES** – The wetland class is **Riverine**

**NOTE:** The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7

**YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number A

### SLOPE WETLANDS

#### Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i> Slope is 1% or less <span style="float: right;">points = 3</span> Slope is > 1%-2% <span style="float: right;">points = 2</span> Slope is > 2%-5% <span style="float: right;">points = 1</span> Slope is greater than 5% <span style="float: right;">points = 0</span>		1
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i> Dense, uncut, herbaceous plants > 90% of the wetland area <span style="float: right;">points = 6</span> Dense, uncut, herbaceous plants > ½ of area <span style="float: right;">points = 3</span> Dense, woody, plants > ½ of area <span style="float: right;">points = 2</span> Dense, uncut, herbaceous plants > ¼ of area <span style="float: right;">points = 1</span> Does not meet any of the criteria above for plants <span style="float: right;">points = 0</span>		0
Total for S 1 <span style="float: right;">Add the points in the boxes above</span>		1

**Rating of Site Potential** If score is: 12 = H 6-11 = M ✓ 0-5 = L

*Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 No = 0	0
Total for S 2 <span style="float: right;">Add the points in the boxes above</span>	0

**Rating of Landscape Potential** If score is: 1-2 = M ✓ 0 = L

*Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i> Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i> Yes = 2 No = 0	0
Total for S 3 <span style="float: right;">Add the points in the boxes above</span>	2

**Rating of Value** If score is: ✓ 2-4 = H 1 = M 0 = L

*Record the rating on the first page*

Wetland name or number A

### **SLOPE WETLANDS**

#### **Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

**S 4.0. Does the site have the potential to reduce flooding and stream erosion?**

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually  $> \frac{1}{8}$  in), or dense enough, to remain erect during surface flows.*

Dense, uncut, **rigid** plants cover  $> 90\%$  of the area of the wetland points = 1

All other conditions points = 0

0

**Rating of Site Potential** If score is: 1 = M ☒ 0 = L

*Record the rating on the first page*

**S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?**

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0

0

**Rating of Landscape Potential** If score is: 1 = M ☒ 0 = L

*Record the rating on the first page*

**S 6.0. Are the hydrologic functions provided by the site valuable to society?**

S 6.1. Distance to the nearest areas downstream that have flooding problems:

The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2

Surface flooding problems are in a sub-basin farther down-gradient points = 1

No flooding problems anywhere downstream points = 0

0

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

0

Total for S 6 Add the points in the boxes above

0

**Rating of Value** If score is: 2-4 = H 1 = M ☒ 0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

0

- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Aquatic bed                                       | 4 structures or more: points = 4 |
| <input checked="" type="checkbox"/> Emergent                               | 3 structures: points = 2         |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1         |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover)     | 1 structure: points = 0          |
- If the unit has a Forested class, check if:*
- ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

**H 1.2. Hydroperiods**

1

- Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).
- |   |                                     |
|---|-------------------------------------|
| <input type="checkbox"/> Permanently flooded or inundated             | 4 or more types present: points = 3 |
| <input type="checkbox"/> Seasonally flooded or inundated              | 3 types present: points = 2         |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1         |
| <input checked="" type="checkbox"/> Saturated only                    | 1 type present: points = 0          |
- ☐ Permanently flowing stream or river in, or adjacent to, the wetland
- ☐ Seasonally flowing stream in, or adjacent to, the wetland
- ☐ **Lake Fringe wetland** **2 points**
- ☐ **Freshwater tidal wetland** **2 points**

**H 1.3. Richness of plant species**

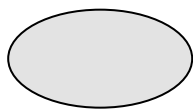
1

- Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.  
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***
- If you counted: > 19 species points = 2  
 5 - 19 species points = 1  
 < 5 species points = 0

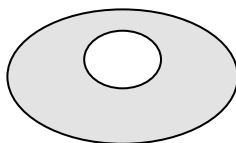
**H 1.4. Interspersion of habitats**

1

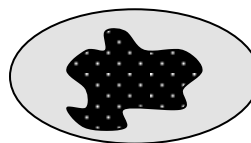
Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



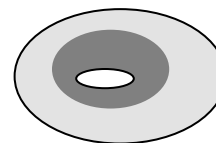
**None** = 0 points



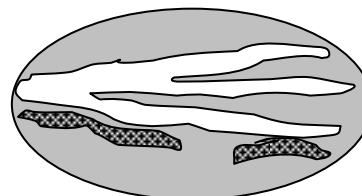
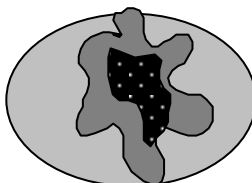
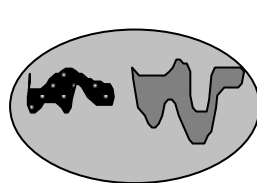
**Low** = 1 point



**Moderate** = 2 points



All three diagrams in this row are **HIGH** = 3points



Wetland name or number A

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	0
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p>0</p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M ✓ 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18</u> = <u>18</u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = 1</p> <p>&lt; 10% of 1 km Polygon points = 0</p>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18</u> = <u>18</u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon points = 3</p> <p>Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10-50% and &gt; 3 patches points = 1</p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon points = 0</p>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p>≤ 50% of 1 km Polygon is high intensity points = 0</p>	0
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p>3</p>

**Rating of Landscape Potential** If score is: 4-6 = H ✓ 1-3 = M < 1 = L

Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p>— It has 3 or more priority habitats within 100 m (see next page)</p> <p>— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p>— It is mapped as a location for an individual WDFW priority species</p> <p>— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p>— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a <u>Shoreline Master Plan, or in a watershed plan</u></p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>	1

**Rating of Value** If score is: 2 = H ✓ 1 = M 0 = L

Record the rating on the first page

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✓ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number A

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt	
Yes – Go to <b>SC 1.1</b> No = <b>Not an estuarine wetland</b>	
<b>SC 1.1.</b> Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	
<b>SC 1.2.</b> Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Cat. I     Cat. II
Yes = <b>Category I</b> No = <b>Category II</b>	
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> <b>SC 2.1.</b> Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?	Cat. I
Yes – Go to <b>SC 2.2</b> No – Go to <b>SC 2.3</b>	
<b>SC 2.2.</b> Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = <b>Category I</b> No = <b>Not a WHCV</b>	
<b>SC 2.3.</b> Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>	
Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> No = <b>Not a WHCV</b>	
<b>SC 2.4.</b> Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?	
Yes = <b>Category I</b> No = <b>Not a WHCV</b>	
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i>	
<b>SC 3.1.</b> Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?	
Yes – Go to <b>SC 3.3</b> No – Go to <b>SC 3.2</b>	
<b>SC 3.2.</b> Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?	
Yes – Go to <b>SC 3.3</b> No = <b>Is not a bog</b>	
<b>SC 3.3.</b> Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?	
Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b>	
<b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.	
<b>SC 3.4.</b> Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	Cat. I
Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	

Wetland name or number A

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>      No = <b>Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>      No = <b>Not a wetland in a coastal lagoon</b></p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>      No = <b>Category II</b></p>	<p style="text-align: center; vertical-align: middle;"><b>Cat. I</b></p> <p style="text-align: center; vertical-align: middle;"><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>— Long Beach Peninsula: Lands west of SR 103</li> <li>— Grayland-Westport: Lands west of SR 105</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 6.1</b>      No = <b>not an interdunal wetland for rating</b></p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?  <span style="float: right;">Yes = <b>Category I</b>      No – Go to <b>SC 6.2</b></span></p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?  <span style="float: right;">Yes = <b>Category II</b>      No – Go to <b>SC 6.3</b></span></p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?  <span style="float: right;">Yes = <b>Category III</b>      No = <b>Category IV</b></span></p>	<p style="text-align: center; vertical-align: middle;"><b>Cat I</b></p> <p style="text-align: center; vertical-align: middle;"><b>Cat. II</b></p> <p style="text-align: center; vertical-align: middle;"><b>Cat. III</b></p> <p style="text-align: center; vertical-align: middle;"><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	



Wetland name or number A

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Wetland name or number B

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 6/10/14  
Rated by C.K. Douglas, A.H. Spooner Trained by Ecology? X Yes \_\_\_ No Date of training May 2007  
HGM Class used for rating Lake Fringe Wetland has multiple HGM classes? X Y \_\_\_ N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map ESRI Aerial Base Map

**OVERALL WETLAND CATEGORY** III (based on functions X or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

\_\_\_\_\_ **Category I** – Total score = 23 - 27

\_\_\_\_\_ **Category II** – Total score = 20 - 22

17 **Category III** – Total score = 16 - 19

\_\_\_\_\_ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H (M) L	H M (L)	H M (L)	
Landscape Potential	H (M) L	(H) M L	H (M) L	
Value	(H) M L	H (M) L	H (M) L	<b>TOTAL</b>
Score Based on Ratings	<b>7</b>	<b>6</b>	<b>5</b>	<b>18</b>

**Score for each  
function based  
on three  
ratings  
(order of ratings  
is not  
important)**

9 = H,H,H  
8 = H,H,M  
7 = H,H,L  
7 = H,M,M  
6 = H,M,L  
6 = M,M,M  
5 = H,L,L  
5 = M,M,L  
4 = M,L,L  
3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	None

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☐ NO → go to 2

☐ YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO – Saltwater Tidal Fringe (Estuarine)**

**YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☐ NO → go to 3

☐ YES – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☒ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☒ At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

☐ YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☒ The wetland is on a slope (*slope can be very gradual*),

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☒ The water leaves the wetland **without being impounded**.

NO – go to 5

☐ YES – The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

Wetland name or number B

**NO** – go to 6

**YES** – The wetland class is **Riverine**

**NOTE:** The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO** – go to 7

**YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

**NO** – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
<u>Slope + Lake Fringe</u>	<u>Lake Fringe</u>
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number B

### LAKE FRINGE WETLANDS

#### Water Quality Functions - Indicators that the site functions to improve water quality

<b>L 1.0. Does the site have the potential to improve water quality?</b>		
<b>L 1.1. Average width of plants along the lakeshore (<i>use polygons of Cowardin classes</i>):</b> Plants are more than 33 ft (10 m) wide <span style="float: right;">points = 6</span> Plants are more than 16 ft (5 m) wide and <33 ft <span style="float: right;">points = 3</span> Plants are more than 6 ft (2 m) wide and <16 ft <span style="float: right;">points = 1</span> Plants are less than 6 ft wide <span style="float: right;">points = 0</span>	<b>0</b>	
<b>L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. <i>These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. Herbaceous does not include aquatic bed.</i></b> Cover of herbaceous plants is >90% of the vegetated area <span style="float: right;">points = 6</span> Cover of herbaceous plants is > <sup>2</sup> / <sub>3</sub> of the vegetated area <span style="float: right;">points = 4</span> Cover of herbaceous plants is > <sup>1</sup> / <sub>3</sub> of the vegetated area <span style="float: right;">points = 3</span> Other plants that are not aquatic bed > <sup>2</sup> / <sub>3</sub> unit <span style="float: right;">points = 3</span> Other plants that are not aquatic bed in > <sup>1</sup> / <sub>3</sub> vegetated area <span style="float: right;">points = 1</span> Aquatic bed plants and open water cover > <sup>2</sup> / <sub>3</sub> of the unit <span style="float: right;">points = 0</span>	<b>4</b>	
<b>Total for L 1</b> <span style="float: right;">Add the points in the boxes above</span>		<b>4</b>

**Rating of Site Potential** If score is: 8-12 = H ☒ 4-7 = M 0-3 = L

*Record the rating on the first page*

<b>L 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>L 2.1. Is the lake used by power boats?</b> <span style="float: right;">Yes = 1 No = 0</span>	<b>1</b>	
<b>L 2.2. Is &gt; 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?</b> <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>	
<b>L 2.3. Does the lake have problems with algal blooms or excessive plant growth such as milfoil?</b> <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>	
<b>Total for L 2</b> <span style="float: right;">Add the points in the boxes above</span>		<b>1</b>

**Rating of Landscape Potential:** If score is: 2 or 3 = H ☒ 1 = M 0 = L

*Record the rating on the first page*

<b>L 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?</b> <span style="float: right;">Yes = 1 No = 0</span>	<b>1</b>	
<b>L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)?</b> <span style="float: right;">Yes = 1 No = 0</span>	<b>1</b>	
<b>L 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the lake or basin in which the unit is found.</i></b> <span style="float: right;">Yes = 2 No = 0</span>	<b>0</b>	
<b>Total for L 3</b> <span style="float: right;">Add the points in the boxes above</span>		<b>2</b>

**Rating of Value** If score is: ☒ 2-4 = H 1 = M 0 = L

*Record the rating on the first page*

Wetland name or number B

### LAKE FRINGE WETLANDS

#### **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion

L 4.0. Does the site have the potential to reduce shoreline erosion?	
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore ( <b>do not</b> include Aquatic bed): <i>Choose the highest scoring description that matches conditions in the wetland.</i>	0
<div style="display: flex; justify-content: space-between;"> <span>&gt; ¼ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide</span> <span>points = 6</span> </div>	
<div style="display: flex; justify-content: space-between;"> <span>&gt; ¼ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide</span> <span>points = 4</span> </div>	
<div style="display: flex; justify-content: space-between;"> <span>&gt; ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide</span> <span>points = 4</span> </div>	
<div style="display: flex; justify-content: space-between;"> <span>Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)</span> <span>points = 2</span> </div>	
<div style="display: flex; justify-content: space-between;"> <span>Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)</span> <span>points = 0</span> </div>	

**Rating of Site Potential:** If score is: 6 = M ☒ 0-5 = L

*Record the rating on the first page*

L 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	1
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0	1
Total for L 5	Add the points in the boxes above	2

**Rating of Landscape Potential** If score is: ☒ 2 = H 1 = M 0 = L

*Record the rating on the first page*

L 6.0. Are the hydrologic functions provided by the site valuable to society?	
L 6.1. Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score.	
There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit	1
<div style="display: flex; justify-content: space-between;"> <span></span> <span>points = 2</span> </div>	
There are nature trails or other paths and recreational activities within 25 ft of OHWM	
<div style="display: flex; justify-content: space-between;"> <span></span> <span>points = 1</span> </div>	
Other resources that could be impacted by erosion	
<div style="display: flex; justify-content: space-between;"> <span></span> <span>points = 1</span> </div>	
There are no resources that can be impacted by erosion along the shores of the unit	
<div style="display: flex; justify-content: space-between;"> <span></span> <span>points = 0</span> </div>	

**Rating of Value:** If score is: 2 = H ☒ 1 = M 0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number B

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

0

- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Aquatic bed                                       | 4 structures or more: points = 4 |
| <input checked="" type="checkbox"/> Emergent                               | 3 structures: points = 2         |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1         |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover)     | 1 structure: points = 0          |
- If the unit has a Forested class, check if:*
- ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

**H 1.2. Hydroperiods**

2

- Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).
- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> Permanently flooded or inundated  | 4 or more types present: points = 3 |
| <input type="checkbox"/> Seasonally flooded or inundated   | 3 types present: points = 2         |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1         |
| <input checked="" type="checkbox"/> Saturated only         | 1 type present: points = 0          |
- ☐ Permanently flowing stream or river in, or adjacent to, the wetland
- ☐ Seasonally flowing stream in, or adjacent to, the wetland
- ☒ **Lake Fringe wetland** **2 points**
- ☐ **Freshwater tidal wetland** **2 points**

**H 1.3. Richness of plant species**

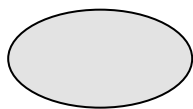
1

- Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.  
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***
- If you counted: > 19 species points = 2  
 5 - 19 species points = 1  
 < 5 species points = 0

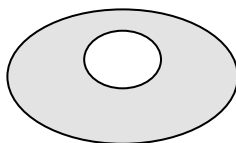
**H 1.4. Interspersion of habitats**

1

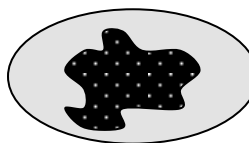
Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



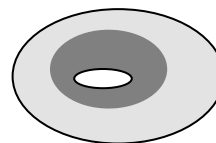
**None** = 0 points



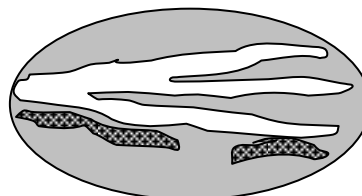
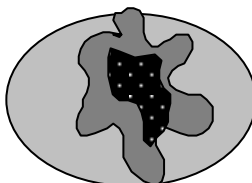
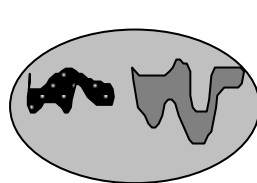
**Low** = 1 point



**Moderate** = 2 points



All three diagrams in this row are **HIGH** = 3points



Wetland name or number B

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	0
<p>Total for H 1</p> <p>Add the points in the boxes above</p>	4

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M ✓ 0-6 = L

Record the rating on the first page

**H 2.0. Does the landscape have the potential to support the habitat functions of the site?**

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18</u> = <u>18</u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = 1</p> <p>&lt; 10% of 1 km Polygon points = 0</p>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18</u> = <u>18</u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon points = 3</p> <p>Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10-50% and &gt; 3 patches points = 1</p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon points = 0</p>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p>≤ 50% of 1 km Polygon is high intensity points = 0</p>	0
<p>Total for H 2</p> <p>Add the points in the boxes above</p>	3

**Rating of Landscape Potential** If score is: 4-6 = H ✓ 1-3 = M < 1 = L

Record the rating on the first page

**H 3.0. Is the habitat provided by the site valuable to society?**

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p>— It has 3 or more priority habitats within 100 m (see next page)</p> <p>— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p>— It is mapped as a location for an individual WDFW priority species</p> <p>— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p>— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>	1
---	---

**Rating of Value** If score is: 2 = H ✓ 1 = M 0 = L

Record the rating on the first page



## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✓ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number C

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland C Date of site visit: 6/10/14  
Rated by C.K. Douglas, A.H. Spooner Trained by Ecology? X Yes \_\_\_ No Date of training May 2007  
HGM Class used for rating Lake Fringe Wetland has multiple HGM classes? X Y \_\_\_ N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map ESRI Aerial Base Map

**OVERALL WETLAND CATEGORY** III (based on functions X or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

\_\_\_\_\_ **Category I** – Total score = 23 - 27

\_\_\_\_\_ **Category II** – Total score = 20 - 22

17 **Category III** – Total score = 16 - 19

\_\_\_\_\_ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	H (M) L	H M (L)	H M (L)	
Landscape Potential	H (M) L	(H) M L	H (M) L	
Value	(H) M L	H (M) L	H (M) L	<b>TOTAL</b>
Score Based on Ratings	<b>7</b>	<b>6</b>	<b>5</b>	<b>18</b>

**Score for each  
function based  
on three  
ratings  
(order of ratings  
is not  
important)**

9 = H,H,H  
8 = H,H,M  
7 = H,H,L  
7 = H,M,M  
6 = H,M,L  
6 = M,M,M  
5 = H,L,L  
5 = M,M,L  
4 = M,L,L  
3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	None

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☐ NO - go to 2

☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☐ NO - go to 3

☐ YES - The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☒ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
☒ At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☒ The wetland is on a slope (*slope can be very gradual*),  
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,  
☒ The water leaves the wetland **without being impounded**.

NO - go to 5

☐ YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- \_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
\_\_\_ The overbank flooding occurs at least once every 2 years.

Wetland name or number C

**NO** – go to 6

**YES** – The wetland class is **Riverine**

**NOTE:** The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO** – go to 7

**YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

**NO** – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
<u>Slope + Lake Fringe</u>	<u>Lake Fringe</u>
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number C

### LAKE FRINGE WETLANDS

#### Water Quality Functions - Indicators that the site functions to improve water quality

##### L 1.0. Does the site have the potential to improve water quality?

L 1.1. Average width of plants along the lakeshore ( <i>use polygons of Cowardin classes</i> ):		
Plants are more than 33 ft (10 m) wide	points = 6	0
Plants are more than 16 ft (5 m) wide and <33 ft	points = 3	
Plants are more than 6 ft (2 m) wide and <16 ft	points = 1	
Plants are less than 6 ft wide	points = 0	
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. <i>These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. Herbaceous does not include aquatic bed.</i>		4
Cover of herbaceous plants is >90% of the vegetated area	points = 6	
Cover of herbaceous plants is $>\frac{2}{3}$ of the vegetated area	points = 4	
Cover of herbaceous plants is $>\frac{1}{3}$ of the vegetated area	points = 3	
Other plants that are not aquatic bed $>\frac{2}{3}$ unit	points = 3	
Other plants that are not aquatic bed in $>\frac{1}{3}$ vegetated area	points = 1	
Aquatic bed plants and open water cover $>\frac{2}{3}$ of the unit	points = 0	
Total for L 1	Add the points in the boxes above	4

**Rating of Site Potential** If score is: 8-12 = H ☒ 4-7 = M 0-3 = L

Record the rating on the first page

##### L 2.0. Does the landscape have the potential to support the water quality function of the site?

L 2.1. Is the lake used by power boats?	Yes = 1 No = 0	1
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in land uses that generate pollutants?	Yes = 1 No = 0	0
L 2.3. Does the lake have problems with algal blooms or excessive plant growth such as milfoil?	Yes = 1 No = 0	0
Total for L 2	Add the points in the boxes above	1

**Rating of Landscape Potential:** If score is: 2 or 3 = H ☒ 1 = M 0 = L

Record the rating on the first page

##### L 3.0. Is the water quality improvement provided by the site valuable to society?

L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0	1
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)?	Yes = 1 No = 0	1
L 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the lake or basin in which the unit is found.</i>	Yes = 2 No = 0	0
Total for L 3	Add the points in the boxes above	2

**Rating of Value** If score is: ☒ 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number C

### LAKE FRINGE WETLANDS

#### **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion

<b>L 4.0.</b> Does the site have the potential to reduce shoreline erosion?		
<b>L 4.1.</b> Distance along shore and average width of Cowardin classes along the lakeshore ( <b>do not</b> include Aquatic bed): <i>Choose the highest scoring description that matches conditions in the wetland.</i>	0	
> ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide		points = 6
> ¾ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide		points = 4
> ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide		points = 4
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)		points = 2
Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)		points = 0

**Rating of Site Potential:** If score is: 6 = M ☒ 0-5 = L

*Record the rating on the first page*

<b>L 5.0.</b> Does the landscape have the potential to support the hydrologic functions of the site?		
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	1
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0	0
Total for L 5	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: ☒ 2 = H 1 = M 0 = L

*Record the rating on the first page*

<b>L 6.0.</b> Are the hydrologic functions provided by the site valuable to society?	
<b>L 6.1.</b> Are there resources along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score. There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit <div style="text-align: right;">points = 2</div> There are nature trails or other paths and recreational activities within 25 ft of OHWM <div style="text-align: right;">points = 1</div> Other resources that could be impacted by erosion <div style="text-align: right;">points = 1</div> There are no resources that can be impacted by erosion along the shores of the unit <div style="text-align: right;">points = 0</div>	1

**Rating of Value:** If score is: 2 = H ☒ 1 = M 0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number C

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

0

- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Aquatic bed                                       | 4 structures or more: points = 4 |
| <input checked="" type="checkbox"/> Emergent                               | 3 structures: points = 2         |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1         |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover)     | 1 structure: points = 0          |
- If the unit has a Forested class, check if:*
- ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

**H 1.2. Hydroperiods**

2

- Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).
- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> Permanently flooded or inundated  | 4 or more types present: points = 3 |
| <input type="checkbox"/> Seasonally flooded or inundated   | 3 types present: points = 2         |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1         |
| <input checked="" type="checkbox"/> Saturated only         | 1 type present: points = 0          |
- ☐ Permanently flowing stream or river in, or adjacent to, the wetland
- ☐ Seasonally flowing stream in, or adjacent to, the wetland
- ☒ **Lake Fringe wetland** **2 points**
- ☐ **Freshwater tidal wetland** **2 points**

**H 1.3. Richness of plant species**

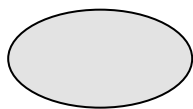
1

- Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.  
*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***
- If you counted: > 19 species points = 2  
 5 - 19 species points = 1  
 < 5 species points = 0

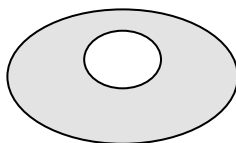
**H 1.4. Interspersion of habitats**

1

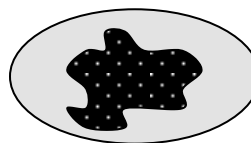
Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



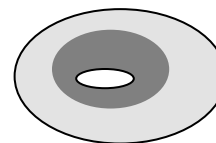
**None** = 0 points



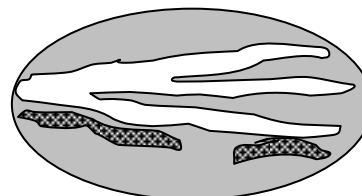
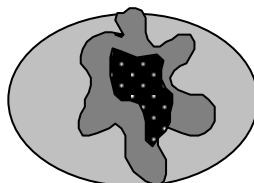
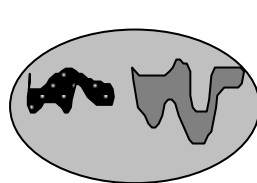
**Low** = 1 point



**Moderate** = 2 points



All three diagrams in this row are **HIGH** = 3points



Wetland name or number C

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	0
<p>Total for H 1</p> <p>Add the points in the boxes above</p>	4

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M ✓ 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18</u> = <u>18</u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = 1</p> <p>&lt; 10% of 1 km Polygon points = 0</p>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18</u> = <u>18</u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon points = 3</p> <p>Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10-50% and &gt; 3 patches points = 1</p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon points = 0</p>	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p>≤ 50% of 1 km Polygon is high intensity points = 0</p>	0
<p>Total for H 2</p> <p>Add the points in the boxes above</p>	3

**Rating of Landscape Potential** If score is: 4-6 = H ✓ 1-3 = M < 1 = L

Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p>— It has 3 or more priority habitats within 100 m (see next page)</p> <p>— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p>— It is mapped as a location for an individual WDFW priority species</p> <p>— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p>— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>	1

**Rating of Value** If score is: 2 = H ✓ 1 = M 0 = L

Record the rating on the first page



## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✓ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.